SOUTHERN
TEXTILE BULLETIN

VOL. 37 CHARLOTTE, N. C., OCTOBER 31, 1929 No. 9

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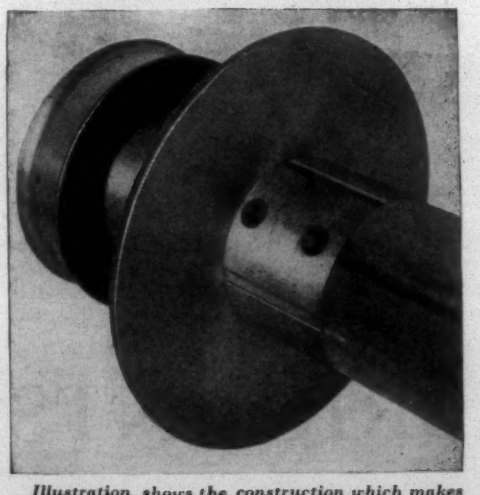

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SOUTHERN
TEXTILE BULLETIN

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VOL. 37 CHARLOTTE, N. C., OCTOBER 31, 1929 No. 9

Textile Chemists Hold Joint Meeting

The joint meeting of the Dyers, Bleachers, Finishers and Mercerizers Division of the Southern Textile Association and the Piedmont Section of the American Association of Textile Chemists and Colorists, held in Charlotte last Saturday, brought together what was probably the largest crowd ever to attend a similar meeting in the South.

The program, arranged by Paul F. Haddock, Chairman of the Southern Textile Division, and Prof. Chas. E. Mullin, Chairman of the Piedmont Section, was an excellent one in every respect.

The meeting opened with a luncheon at Hotel Charlotte at 1 p. m., with Professor Mullin presiding. The following technical papers were presented at the meeting:

Chemistry in Its Relation to Dyers

By Samuel L. Hayes, Resident Manager

U. S. Finishing Company, Hartsville, S. C.

In attempting to discuss the role of Chemistry in relation to the dyeing industry, one has an easy task. In a broad sense, the relation of Chemistry to the dyeing industry should include Chemistry as related to the preparation of the raw materials used by dyers and in dyeing. In other words, it would include the Chemistry of the manufacture of dyestuffs, chemicals, wood extracts, and all materials used in the coloring of textiles. It should also include something of the theory of dyeing.

The time allowed for this paper is too short to discuss the above problems. If one is interested in Chemistry as related to the manufacture of dyestuffs, we would refer them to the book on "Creative Chemistry," by the late Edwin E. Slosson, which, in an interesting and not too scientific manner, discusses this subject, and to a paper presented at the last general meeting in Charlotte, by Mr. Phillip Stott, a member of our Association, who discussed it in a language which a layman can understand.

If you are interested in the theory of dyeing, which after all is a matter of dispute, we would refer you to any of the standard works on dyeing. Is dyeing chemical, is it physical, is it electrical, or is it a combination of all three? For some of the latest information on this phase of our subject, we would refer you to a recent issue of the American Dyestuff Reporter and to several papers read and published during the last two or three years by Walter Scott and Henry Hermann of our Association. Nor will we touch upon the important, and perhaps we may say, vital influence of Ph Control. That phase of the discussion we leave in the hands of our Chairman.

In this short paper we shall confine ourself to Chemistry specifically as related to dyers, and shall try to show that a good dyer should be a good chemist. We shall try to show through a series of practical applications that any dyer who does not have a knowledge of Chemistry is handicapped in his work and that it would be to his advantage to school himself in that science. We have changed our paper from "Chemistry in Relation to Dyeing" to "Chemistry in Its Relation to Dyers."

There are certain qualifications which are inherently common to all professions. There are special qualifications which a dyer must possess. First and foremost, a good eye for color and color value. Either one has this asset naturally, or they will never have it. True it can be developed and trained, but it cannot be acquired. A dyer must also be familiar with the materials he is handling, and without a knowledge of Chemistry he cannot possess this qualification.

There have been, and are now, any number of good dyers who have been successful in their work and who have no knowledge of Chemistry. There will always be dye houses where the nature of the work is so limited that one may be a good dyer in that particular plant, but the successful dyer of the future, who expects to fit himself for a desirable position, must combine with his other assets and understanding of Chemistry. The time has passed when a knowledge of one or more fibres and one or more classes of dyestuffs is sufficient. Let us in imagination picture the problems which may confront a dyer in a piece goods plant during the course of a day's work.

A complaint comes in that a lot of mineral khaki was improperly dyed, as evidenced by a so-called faded garment. His knowledge of Chemistry leads to the correct solution that the laundry had used oxalic acid as an antichlor, and as the oxides of iron and chromium are soluble in oxalic acid the garment was almost colorless.

He finds he is out of hydrochloric acid, and his knowledge of Chemistry tells him to use sulphuric acid in his bleach house, and on some of his diazotized and developed work. It tells him not to substitute sulphuric acid in his aniline black where the lower solubility of aniline sulphate would cause trouble.

His knowledge of Chemistry tells him not to dye benzo-purpurine 4B on one set of jiggs and diazotized and developed colors on the adjacent set as he realizes the effect of the acid fumes on the bonzo-purpurine; it tells him to wash out all salts from his goods before he soaps them; it tells him when under varying market conditions formic acid, or acetic acid is the best buy; it tells him the difference to make in his formula if he changes his oxidizing agent from potassium chlorate to sodium chlorate; in an emergency it allows him to change his oxidizing agent from bichromates to perborates or persulfates, with a minimum risk to the plant; it tells

him when to use straight hydrosulphite and when to use formaldye-hydrosulphite.

Similar instances as the above could be given almost without limit. His knowledge of Chemistry enables him to understand the reduction of his indigo vat, the diazotization and coupling of his developed colors, the dispersion of his Celanese dyeing colors, the precipitation of metallic soaps in waterproofing, the condition of his paranitraniline bath, the reaction between metallic salts in silk weighting, the effect of certain metals, such as iron on tannic acid, copper on sulphur colors and monel metal on certain diazotized and developed colors, the production of a heavy insoluble ash content in fireproofing, the after-treatment of a wood or extract dye, the control of the reduction of vat colors, the protection of wool in vat dyeing on a mixed fabric, the protection of Rayon in the mercerization of a Rayon and cotton fabric, and innumerable other problems which are part and parcel of our daily work.

If we now list wool, shoddy, cotton, silk, Rayon, Celanese, weighted silk, unweighted silk, immunized cotton, ramie, jute, as the different fibres and remember that a dyer must perform his work not upon a cloth made of one fibre, but consisting of two or more of the above fibres.

In like manner we may list direct, acid, basic, diazotized and developed, sulphur, vat, indigo, indigosol, anpthol, wood, mineral, and other classes of dyestuffs. With the above fibres and dyestuffs he is called upon to produce various results—one fibre dyed, one left white; one dyed one shade, one a contrasting shade. His goods must when necessary be fast to stoving, fast to cross-dyeing, fast to washing, fast to light, fast to vulcanizing, capable of being discharged, and yet always produced at the lowest cost consistent with the desired results.

Today this: without a thorough knowledge of the materials he is working with, without a thorough understanding of their properties, is out of the question. And if he has a thorough understanding of the properties and changes which take place in the materials he is using, he has a thorough understanding of Chemistry, for after all, a thorough understanding of Chemistry is based upon a knowledge of the properties and changes in matter.

We have purposely given in mere outline a few of the chemical problems dyers must solve, and leave the subject for detailed discussion in our afternoon meeting.

Chemistry in Texitle Finishing

By Charles L. Schuttig

Chemist, A. Klipstein & Co.

There is an old saying that "Brevity is the Soul of Wit," and since no less an authority than Percy Bean in Volume 1 of his latest work on "The Chemistry and Practice of Finishing" used something over six hundred pages describing the details of the finishing of cotton piece goods alone, I am afraid that in the brief time at my disposal it will be more or less impossible for me to indulge in any lengthy details of the subject assigned to me, which is "Chemistry in Textile Finishing."

This being a Southern meeting, it may be reasonably assumed that we are not particularly interested in the finishing of worsted or woolen fabrics, since this industry is located more or less in New England. I also feel that it would not be interesting to use this time by going into the chemistry and finishing of silk fabrics, which we all know are more or less confined to New Jersey and Pennsylvania.

Chemistry plays an important part in the manufacture of the Rayon and Celanese fibres but does not enter very greatly into the finishing processes of the fabrics. These fabrics generally take pure finishes, the only chemical processes being removal of oils and sizes applied to Rayon and Celanese by the manufacturer; and since the chemical control of these processes is similar to that of cotton it is advisable to pass right on to chemistry as applied to the finishing of cotton piece goods.

The cloth should come to the finisher properly bleached, mercerized and dyed. The best condition of the cloth for finishing purposes of course is neutral. However, quite often the cloth comes up to the finishing room containing impurities which are quite detrimental for the production of a perfect finish. Often the cloth comes from the bleach house in the acid or alkaline condition, or it may contain sulphates and other salts. Mercerized yarns which are manufactured into piece goods have been known to contain insoluble oils and greases which form resists in the cloth. On the other hand, chemicals used in the deying operation may not have been entirely removed. All these conditions influence the actual finishing, and unless the finisher is familiar with the actual condition of his cloth it is impossible for him to produce the best results.

This, therefore, becomes a matter of chemistry and it is at this point that the services of the plant chemist become of value in connection with the actual finishing of the cloth, and it is his first duty to examine the cloth by actual analysis and correctly determine its condition. He should then report same in detail to the finisher so that he could correct his cloth and formulate his finish accordingly, should it be necessary.

As you all know, a finishing mill uses many different chemicals in the production of its various finishes, and it is only by close chemical control that the best products may be selected and the fullest value realized by the mill for the money it spends on these materials. Therefore, the second important duty of the chemist becomes the analysis and evaluation of these products.

The materials and chemicals ordinarily used in finishing can be divided into four groups—the first group comprising adhesives, binders and stiffeners such as corn starch, potato starch, sago, tapioca, rice, dextrines, in addition to the various gums like tragacanth, tragasol, Irish moss, glue, glucose, etc. The second group contains the fillers and weighters such as China clay, talc, barium sulphate, calcium sulphate, magnesium sulphate, sulphate of soda, etc. The third group represents the ingredients used in softening, including the oily and greasy substances as tallow, tallow substitutes, Japan wax, parraffine wax, sulphonated castor oil, mineral oils, and similar products. The fourth group contains the deliquescent materials generally used because of their hydroscopic, or water attracting properties, including products like calcium chloride, magnesium chloride, zinc chloride, epsom salts, etc.

Tests of all these materials should be made before using, in order to determine their fitness for the use intended. They should all be tested for purity, possible adulteration, strength, etc.; while the products known as softeners and finishing oils should be especially examined for odor, color, nad the possible development of rancidity after finishing, which would cause bad odors and yellowing in whites.

A third and vital duty of the chemist is that of the chemical control of all finishing formulas in order to eliminate the possibility of defects in the finish developing after the cloth has left the mill. I refer to colors turning off-shade, tendering of the cloth, mildew stains, yellowing of whites, development of rancidity with the consequent bad odor, etc.; and the chemist by a close

study of the materials used, mill conditions and storage conditions after the cloth is shipped, can easily devise methods and formulas that will prevent these defects.

Fourth, the progressive mill is the one that is constantly bringing out new formulas as well as duplicating other successful finishes. The chemist can co-operate closely with the finisher in the development of new finishes, duplication of finishes, as well as general research in this connection, which will also include the close study of general plant conditions with the idea of keeping at a minimum the general mill costs, because, though the finishing room may operate very economically, excessive operating costs in other departments would naturally increase the actual finishing costs.

Finishing is a practical art, therefore a thorough knowledge can only be acquired by practical experience, for the correct use of the various machines is important for the production of the desired finish as well as the selection of proper chemicals and formulas. It would seem also that the ideal situation is for the finisher to have a rather comprehensive knowledge of applied chemistry, so that he may be better able to co-operate in the advancement and success of the mill from the finishing standpoint.

It is very evident that the knowledge of chemistry will go a long way toward the success of the finisher, and I think you will agree with me that the men who have made the greatest success in this line in recent years have been amply fortified with a basis knowledge of chemistry.

Chemistry in Cotton Piece Bleaching

By George P. Feindell, Chemist, Union Bleachery

The chemistry of bleaching is in itself a very broad subject. It will be impossible for me to tell all of the ways in which chemistry is involved in bleaching. I will merely point out some of the practical chemistry as applied in the chlorine bleaching of cotton piece goods.

The first step in bleaching is preparation. A good bleach cannot be obtained unless the goods are first properly prepared.

Preparation usually consists of singeing, steeping, grey souring, and kier boiling, although sometimes steeping and grey souring are omitted and the goods are taken directly from the singer to the kier.

The operation of singeing consists of passing the cloth over a series of flames or heated plates to remove the projecting fibres from the surface of the cloth.

In steeping, the cloth is taken from the singer, passed either through hot water or through a desizing solution and allowed to steep from 12 to 18 hours. The purpose of this treatment is to allow fermentation to convert the starch matters into a more soluble form. From the steep the cloth is given a cold treatment in dilute sulphuric acid, usually at from 1 to 2 degrees Tw. It is then allowed to lay for a short period of time. This treatment partly hydrolizes the starchy and sizing materials.

After sour, the goods are washed and taken to the kier where they are boiled under pressure in a solution of about 3 per cent caustic soda, figured on the weight of the goods. Kier boiling saponifies the fatty and waxy matters. It also dissolves the pectin compounds, thus leaving almost pure cellulose except for a brown colored matter which must be removed by bleaching to give a good white.

From the kier the goods are washed and passed through a cold solution of sodium hypochlorite or bleach liquor. The strength of the bleach liquor varying according to the weight and construction of the cloth—usually from 1 to 2½ degrees Tw. After passing through the bleach liquor, the goods are squeezed and piled into bins, where they are allowed to lay from 6 to 12 hours. They are then washed and scoured in dilute sulphuric acid, then treated with an antichlor solution, which may be either sulphur dioxide dissolved in water or a solution of sodium bisulphite. In the case of light goods, the sour is sometimes omitted, the goods being simply washed and treated with an antichlor.

The general routine of preparation and bleaching in most bleacheries is along the order just given. Usually things go along very well. However, there are times when difficulties arise which are hard to locate.

For instance, the dyer may report that the goods are not properly prepared and that they take the dye unevenly, or that the cloth has resist spots, or tender places, or places that dye darker than the rest of the fabric.

The starcher may report that the goods do not take the blueing properly, and so on.

Often these troubles encountered in bleached goods do not originate in the preparation or bleaching, but go back to the grey cloth before it is processed.

Sometimes the cloth contains improper sizing materials which are difficult to remove, or the cloth may have become wet in storing or stained with mineral oils and rust.

Improper sizing materials are paraffin waxes, tallow substitutes as mineral oils, and chlorides of magnesium, calcium and zinc. Paraffin waxes and mineral oils, being not saponifiable, are extremely difficult to remove. If traces are left in the cloth, they form resist spots or mordants which later give serious trouble in dyeing and printing.

Chlorides of magnesium, calcium and zinc are easily broken down by heat, thereby liberating free hydrochloric acid which tenders cotton.

Proper sizing materials are starch, tallow and saponifiable oils.

Grey cloth that has become wet through storing is very apt to mildew quickly because it contains considerable amount of starch and when excess moisture is present. there is an excellent opportunity for the growth of mildew. In some cases it progresses to such an extent as to actually weaken the cloth. Severe cases of mildew are difficult to remove without injuring the fabric.

Rust stains are removed with oxalic acid, however, if oxalic acid is not completely washed out or allowed to dry in the fabric, it will cause tendering, which usually shows up after singeing.

Having briefly summarized the difficulties encountered in the grey goods, I will now go on and deal with the difficulties experienced in the actual preparation and bleaching.

In singeing, care must be taken that the cloth is not scorched, and that the flame is of uniform height. Scorching will cause loss in tensile strength. Uneven flame will cause streaks that may later show up in dyeing.

Care must be taken in steeping, that the goods do not lay too long in the bins. Also that the bins are clean. During warm weather, mildew will set in and often it passes unnoticed until after the goods are bleached. A thorough and regular cleaning of steeping bins is a very good practice.

In the grey sour, it is essential that the acid is diluted before adding to the souring bath. A separate mixing tank to dilute the concentrated acid prevents the possibility of any of the strong acid being spattered on the cloth.

The kiers should be loaded in such a manner that the

goods will not channel, thus getting even distribution of liquor throughout the kier. Liquor enough should be used to completely cover the goods, yet too much should not be used, as it will cause the goods to float and chafe them against the sides of the kier. All the air must be excluded before pressure is put on, as oxygen in the presence of hot caustic formation of oxycellulose. The sides of the kier should be smooth and well coated. The water should be soft and free from iron, as hard water causes insoluble soaps and iron causes yellow stains which only a sour will remove.

In the making up of the bleach liquor, it is very essential that it runs uniform in available chlorine from mix to mix, also that it is free from contamination. Iron is one of the greatest sources of contamination. It is usually present in the form of rust. Pipes conveying the bleach liquor from the storage tanks to the chemic machines should be of pure lead or Duriron, or of such material that it will not be attacked, thus introducing particles of metal into the bleach liquor.

Iron, iron rust, or particles of metal getting into chemic act as a very speedy catalytic agent. Thus when particles of metal get on the cloth in the presence of chemic, the cloth in that particular spot is very much over bleached, in fact so much that oxycellulose is formed. Oxycellulose not only resists direct, sulphur and vat dyestuffs, but loses its tensile strength, often causing small holes to appear in the goods when finished.

Complete removal of chemic, acids and alkali after bleaching is very essential. Chemic, if dried in the cotton, also forms oxycellulose. Mineral acids, as sulphuric acid, when dried in cotton, not only tenders, but forms hydrocellulose, which gives trouble in dyeing.

Cloth that has alkali dried in will not take blueing properly. Also it has a tendency to become yellow rather quickly on ageing.

Thus you can readily see how essential it is that each step in the bleaching of cotton piece goods must be very closely watched in order to obtain the best results possible.

As time does not permit me to go further with this extensive subject, I do hope that, in a small measure, I have made you realize to what a large extent chemistry is involved in the chlorine bleaching of cotton piece goods.

Chemistry as Applied to Printing

By P. H. Stott

Technical Representative, Newport Chemical Works

When I was asked to speak on this subject and to confine my remarks to a relatively short space of time, it will be appreciated that, at best, I can give no more than a general outline of the theories involved and go over, more or less briefly, the chemical reactions which take place in the various methods of printing.

We are all more or less familiar with the results of such chemical reactions. One has only to take a short trip through the dry goods department of any large store and study for a few moments the wealth of design and the brilliance and variety of color which greets the eye to realize at once that there must be more to the production of such effects than actually appears "on the surface." To claim that chemistry alone is responsible for the production of these beautiful effects, would be fallacious in the extreme. In fact, credit must be given more perhaps to the mechanical and physical sides of the processes, aided and abetted by chemistry, unless, indeed, one considers that the colors themselves are chemicals. In that case, of course, chemistry becomes the predominant science and the chemistry of color production is infinitely more complex than the chemistry of color application. On the chemistry of color production, however, I shall have nothing to say, so let us pass on to a consideration of the chemistry of application as concerns printing.

This section of the country, naturally, is primarily interested in the processing of cotton and its allied fibres and it, therefore, seems appropriate to allot most of the time available to a discussion of this branch of the printing industry. We have to consider the application of various types of dyestuffs, according to their chemical nature. The underlying chemical principles of the application of vat colors will not answer in the application of naphthols or basic colors. The current demand for fastness to laundering and light of all kinds of dyed and printed goods has resulted in a tremendous increase in the use of the so-called "Vat Colors." In most cases, these answer the most stringent demands made upon them and today are probably the most important dyestuffs suitable for cotton printing. The chemical theories underlying their successful application in printing are practically identical with those governing their application in the dye vat. In their original form, vat colors are not soluble in water or alkalies. Subjected to the action of reducing agents in alkaline solution, however, they are converted into their so-called "leuco compounds" which are soluble and substantive to cotton and other fibres. The name Leuco is taken from the Greek word "Leukos," meaning "White," and was used chemically in connection with basic colors, almost all of which are converted by the action of hydrogen into colorless compounds which reoxidize in most cases back to the original dyestuff. The term Leuco then has come to be regarded as the reduced form of any dyestuff or chemical which reforms its original when the effect of the reducing agent is removed. The term is somewhat of a misnomer now as the Leuco compounds of the vat colors in most cases are highly colored, but not of the same color as the original dyestuff.

The chemical processes to be performed then are essentially two: first, the reduction of the vat color to its Leuco compound, and, second, the oxidation of the vat color from its Leuco compound. The most suitable reducing agent is sodium hydrosulphite or its condensation compounds with formaldehyde. In printing, two general methods can be quoted. The first calls for a partial reduction of the dyestuff before incorporating it with the printing paste. The second is to mix the dyestuff with the printing paste and effect the reduction in the ager. The former method gives somewhat greater color value but on account of the caustic alkali and unstable nature of the Leuco compound, it is not as practical, nor as easy to control, as the second method. This method uses potassium carbonate as the alkaline medium and the hydrosulphite-formaldehyde (formopon) as the reducing medium. The color, gums, starches and formopon are mixed, printed and dried. Up to now, only a slight reduction of the color has taken place, and it is only when the cloth is subjected to the action of moist airfree steam that the formopon attains its maximum activity, releasing free hydrosulphite, which reduces the color and permits the substantive Leuco compound to be absorbed by the fibre. The restoration of the original color by oxidation of the Leuco compound is now proceeded with. Various accelerators of oxidation can be used. For example, sodium bichromate, sodium perborate, ammonium persulphate. These compounds all supply the oxygen necessary to overcome the hydrogen in the Leuco com-

pound and a final treatment in boiling soap completes the process of oxidation. The chemical control of the entire process is, of necessity, centered on the two chemical reactions taking place. Too much hydrosulphite may cause too vigorous a reduction of the dyestuff to a form beyond its Leuco compound. On the other hand, insufficient reduction will cause loss of color by incompleteness of chemical reaction. Similarly, incomplete oxidation may lead to impaired fastness and lack of brilliance of shade.

We will have to leave the vat colors and pass on to what is a comparatively recent development of an old and well known chemical process. I refer to the so-called naphthols and rapid fast colors. Much has been written and published in recent years about these dyestuffs and their application and various uses. The chemistry of their application is based on the chemical reaction known as diazotization, on which reaction is based the manufacture of all those dyestuffs known as Azo colors, comprising almost all direct cotton colors and acid colors for wool. At some time or another, you have all used what is known as a developed dyestuff, such as Primuline or Black BH: After dyeing, you treated the yarn with sodium nitrite and acid and then developed it in a fresh bath with Developer B or beta naphthol. In doing this you were, unconsciously perhaps, actually making a dyestuff on the fibre and that is exactly what you do when you use naphthols. When a chemical compound, known as an amine (from ammonia), is treated with nitrous acid (formed by the action of any suitable acid such as muriatic acid on sodium nitrite) the reaction known as diazotization occurs, which increases the chemical activity of the amine by altering its chemical nature to what; for convenience, can be called the diazo salt. If this diazo sale is brought into contact with other suitable chemicals, dyestuffs are formed by the combination of the two chemicals. By varying the amine or the secondary compound, a variety of colors can be produced. In order to simplify, as much as possible, the use of these colors for printing, the diazo salts are put on the market in a stable form. The unstable diazo salt is neutralized with some suitable alkali which renders it inert towards the naphthols. This inert salt is sometimes referred to as a nitrossamine. There are two ways in which these nitrosamines can be used. The first is to prepare the goods with the naphthol ground, print on the nitrosamine from a slightly acid or neutral paste and then steam. The action of the acid or steam, or both, causes a reversion of the nitrosamine to its original diazo salt, in which form it immediately combines with the prepared and forms the color. The so-called rapid fast colors are mixtures already prepared in paste form of the nitrosamines and naphthols. They do not compare, however, in general fastness properties with vat colors. All one has to do is to print these from a neutral paste, age for a short time and pass through a hot acid bath. The acid forms the diazo salt which gives the color by combination with the naphthol. The general methods of application of the rapid fast colors permit of greater production than is possible with the use of alizarin, on account of the length of time the latter must be steamed.

Alizarin falls in the class of mordant colors. By this is understood those coloring matters which, while possessing no tinctorial value themselves, are capable of combining the oxides of certain metals to form insoluble colored precipitates on the cloth. This characteristic of the mordant colors is dependent upon their chemical constitution. They all contain one or more hydroxyl or carboxyl groups and it is these groups which have the property of combining with metallic oxides to form lakes, which are actually insoluble color salts of the metals. In other words, just as the property of the diazotized amine group to combine with naphthols and their sulphonic acids to yield various colors is utilized in one branch of printing, the property of hydroxyl and carboxyl groups to combine with metallic oxides is utilized in another branch. In both cases, by varying either one, or both, of the compounds, a great variety of shades can be obtained. Taking alizarin as an example, its various lakes with various metallic oxides are as follows: Aluminum, red; iron, black or purple; tin, orange; chromium, claret.

The chemistry underlying the color production is relatively simple. The printing paste is prepared usually with the acetates of the metals and the mordant color is incorporated just before printing. During the steaming process the oxides of the metals are formed by decomposition of the acetates and the color produced by combination.

Next, we should devote a little time to the consideration of aniline black. Aniline black does not exist as a dyestuff ready for application, but must be produced on the fibre itself. Neither is it wholly a steam color, for its development, under proper conditions, can be brought about by exposure to a warm moist atmosphere. Aniline black is, in reality, an oxidation product of aniline and is formed on the fibre by printing a paste composed of aniline salt, an oxidizing agent and an oxygen carrier. There are several of the latter but for the oxidizing agent the only one in general practical use is sodium chlorate. The oxygen carriers most generally used are copper sulphide, copper sulphocyanide, vanadium chloride and yellow prussiate of potash and from these the various styles of black take their names. The actual chemical detail of the formation of aniline black has, perhaps, never been entirely understood, and many theories have been put forward by various sponsors. At all events, the intermediate product known as emeraldine appears to be the result of the successive action of two atoms of oxygen on aniline with a subsequent condensation of two molecules of the resultant compound with each other and one molecule of aniline. The further action of one atom of oxygen produces the so-called red imine, which, by polymerization, forms aniline black. These various steps in the oxidation of aniline are effected by exposing the printed goods to steam and subsequently completing the oxidation by passing through a hot solution of potassium bichromate. It is obviously not within the scope of this paper to discuss any of the details or modifications of the general principle involved, namely, that of the oxidation of aniline.

A great deal of printing of various kinds is done with basic colors. One reason for this is the purity and brilliance of shade obtained with these dyestuffs. Unfortunately, however, the colors are not distinguished by more than moderate fastness. A very large outlet for them is found in the preparation of colored discharge styles, particularly on pure and weighted silks. This process will be discussed a little later. Basic colors are the salts of organic bases, which are generally incapable of coloring cotton without the use of a mordant. In this respect, they are similar to the true mordant colors in physical character, as the base requires to be precipitated on the fibre in an insoluble form. This is usually done with the aid of tanic acid, since it forms more or less insoluble salts with the color bases and thus fulfills the conditions of their fixation on the cloth as colored lakes. These lakes then are actually the tannates of the bases, but in order to fix them more permanently, they

(Continued on Page 29)

Attendance At Chemists Meeting

Among those who attended the meeting of the Dyers, Bleachers, Finishers and Mercerizers Division of the Southern Textile Association and the Piedmont Section A. A. T. C. C. at Charlotte were the following:

Adams, H. S., Treasurer, Springstein Mills, Chester, S. C.
Atkins, J. H., Overseer Slashing, Lancaster Cotton Mills, Lancaster, S. C.
Allen, H. M., Kerr Bleachery, Concord, N. C.
Allen, R. H., Roberdel Mfg. Co., No. 2, Rockingham, N. C.
Allwood, A., Charlotte, N. C.
Armfield, J. E., Overseer Dyeing, White Oak Mills, Greensboro, N. C.
Arrington, R. W., Supt., Union Bleachery, Greenville, S. C.
Attaway, J. C., Student, Clemson College, Clemson College, S. C.
Barker, Jas.C., Ja., Supt., Green River Mfg. Co., Tuxedo, N. C.
Barker, W. L., Demonstrator & Salesman, Nat'l Aniline & Chemical Co., Charlotte, N. C.
Barnes, H. B., Supt., Proximity Print Works, Greensboro, N. C.
Barnhardt, W. H., Celanese Corp., Charlotte, N. C.
Baum, H. L., Mgr. and Treas., Duchess, Inc., Charlotte, N. C.
Beaucontet, A. J., Dyer, U. S. Finishing Co., Hartsville, S. C.
Beane, A. F., Dyer, Yarns Corp. of America, Spartanburg, S. C.
Bell, J. L., Finisher, N. C. Finishing Co., Salisbury, N. C.
Bigham, R. S., Salesman, Texile Mill Supply Co., Charlotte, N. C.
Bishop, Claude E., Chemist, Greensboro, N. C.
Black, Jas. W., Jr., Laboratory Mgr., Ciba Co., Inc., Greensboro, N. C.
Bolen, W. Paul, Sales Dept., Chemical & Dye Corp., Hickory, N. C.
Boone, C. F., Salesman, Chas. W. Young & Co., Philadelphia, Pa.
Borrmann, B., Colorist, Sandoz Chemical Works, Charlotte, N. C.
Bost, E. L., Supt., American Dye Works, Burlington, N. C.
Bowes, L .M., Ware Shoals, S. C.
Boyd, L. M., Salesman, Scholler Bros., Inc., Salisbury, N. C.
Bramen, L. A., Dyer, Stonecutter Mills, Spindale, N. C.
Briggs, Howard, Asst. Dyer, Stonecutter Mills, Spindale, N. C.
Brooks, Clyde K., Asst. Supt., N. C. Finishing Co., Salisbury, N. C.
Brooks, Chas. E., Dixie Chemical Co., Charlotte, N. C.
Brown, H. H., Roberdel Mfg. o., No. 2, Rockingham, N. C.
Brown, J. E., Overseer Finishing, Gregg Dyeing Co., Graniteville, S. C.
Brown, J. M., Salesman, Arkansas Co., Inc., Charlotte, N. C.
Brown, James, Mgr., Fairforest Finishing Co., Spartanburg, S. C.
Buck, R. E., Sou. Mgr., Arnold-Hoffman Co., Charlotte, N. C.
Buck, R. E., Jr., Salesman, Arnold Hoffman & Co., Charlotte, N. C.
Buening, C. R., Jr., Chemical Salesman, Jacques Wolf & Co.
Burrows, Arthur, Dyer, Rock Hill Printing & Finishing Co., Rock Hill, S. C.
Butterworth, J. E., V.-Pres., H. W. Butterworth & Sons, Philadelphia, Pa.
Button, J. B., Salesman, Jefferson Island Salt Co., Louisville, Ky.
Campayner, L. C., Supt., Brown Mfg. Co., Concord, N. C.
Campbell, M. U., Salesman, Carbic Color & Chemical Co., New York City.
Capein, J. E., Dyer, Lola Mfg. Co., Gastonia, N. C.
Clanton, Albert, Overseer Dyeing, White Oak Mills, Greensboro, N. C.
Clark, David, Editor, Southern Textile Bulletin, Charlotte, N. C.
Clark, John W., Randolph Mills, Franklinville, N. C.
Clemons, R. S., Charlotte, N. C.
Cobb, F. Gordon, V.-Pres., Lancaster Cotton Mills, Lancaster, S. C.
Cole, W. J., Dyer, Mansfield Mills. Lumberton, N. C.
Constable, H. B., Salesman, DuPont Company, Charlotte, N. C.
Cooke, John C., Bus. Mgr., Cotton, Atlanta, Ga.
Cosby, John C., Asst. Mgr., Ciba Co., Inc., Greensboro, N. C.
Craig, J. Robert, Sec'y and Treas., Cocker Machine & Foundry Co., Gastonia, N. C.
Crayton, W. F., Demonstrator, DuPont Co., Charlotte, N. C.
Cross, H. B., Printer, Rock Hill Printing & Finishing Co., Rock Hill, S. C.
Dabbs, John L., Sales Mgr., DuPont Co., Charlotte, N. C.
Daniel, J. R., General Dyestuff Corp., Charlotte, N. C.
Davidson, E. P., Laboratory, DuPont Co., Charlotte. N. C.
Davis, T. C., Student, Clemson College, S. C.
Dickson, L. C., V.-Pres., Stevens-John Co., Charlotte, N. C.
Dilling, Marshall, Supt., A. M. Smyre Mfg. Co., Gastonia, N. C.
Donovan, Edwin L., Textile Engraver, Rock Hill Finishing Co., Rock Hill, S. C.
Dorton, C. S., Finisher, Brown Mfg. Co., Concord, N. C.
Duncan, James R., Colorist, Clearwater Mfg. Co., Clearwater, S. C.
Duxbury, Martin, Dyer & Bleacher, Westboro Weaving Co., Greenville, S. C.
Easley, Jas. H., Chemist, N. C. Finishing Co., Salisbury, N. C.
Eaves, B. L., Asst., Carolina Cotton & Woolen Co., Fieldale, Va.
Ellis, Frank, Laboratory Asst., General Dyestuff Corp., Charlotte, N. C.
Entwistle, Jas. W., Bleacher, Hartsville Print & Dye Works, Hartsville, S. C.
Escott, Albert, Sou. Rep., American Wool & Cotton Reporter, Charlotte, N. C.
Faulkenberry, Grady E., Laboratory, DuPont Co., Charlotte, N. C.
Feinster, E. A., Jr., Dyer, Eagle & Phenix Mills, Columbus, Ga.
Feindel, George P., Chemist, Union Bleachery, Greenville, S. C.
Field, H. H., Dyer, Eagle & Phenix Mills, Columbus, Ga.
Fiske, M. S., Division Mgr., Jefferson Island Salt Co., Louisville, Ky.
Fitzpatrick, T. Z., Chemist, American Yarn & Processing Co., Mt. Holly, N. C.
Foil, R. M., Night Overseer, Cannon Mills, Kannapolis, N. C.
Ford, K. F., Asst. Dyer, Aberfoyle Mfg. Co., Belmont, N. C.

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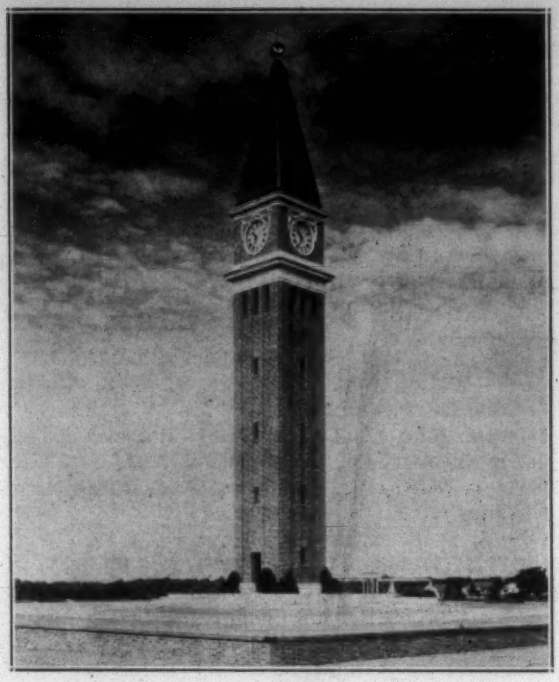
Attendance at Chemists Meeting

(Continued from Page 10)

Forney, C. D., Mgr. Dyeing Dept., Cleveland Mill & Power Co., Lawndale, N. C.
Forney, C. D., Jr., Student, State College, Raleigh, N. C.
Franklin, Jerome, DuPont Company, Augusta, Ga.
Friday, D. L., Asst. to Gen'l Mgr., Cocker Machine & Foundry Co., Gastonia, N. C.
Gaede, A. Henry, Sou. Rep., Laurel Soap Works, Philadelphia, Pa.
Galloway, J. V., Chief Chemist, Shoaf-Sink Mill, Lexington, N. C.
Glenn, R. W., Mgr., The Ciba Co., Inc., Greensboro, N. C.
Goeller, M. L., Salesman, Stein, Hall & Co., Charlotte, N. C.
Graham, Peter, Supt., Dyeing, Carolina Dyeing & Winding Co., Mt. Holley, N. C.
Grant, Robert J., Gen'l Mgr., Noil Chemical & Color Works, New York City.
Gray, David, Salesman, United Chemical Products, Brooklyn, N. Y.
Green, L. E., DuPont Co., Charlotte, N. C.
Greer, W. W., Salesman, Seydel-Chemical Co., Greenville, S. C.
Gregg, J. M., Stafford Company, Charlotte, N. C.
Gregg, L. A., DuPont Company, Charlotte, N. C.
Grier, Preston D., Laboratory Asst., Sandoz Chemical Works, Charlotte, N. C.
Griffin, Ira L., Mgr. Stein, Hall & Co., Charlotte, N. C.
Grimshaw, A. H., Prof. Textile Chemistry, N. C. State College, Raleigh, N. C.
Griswold, Ray J., Salesman, Hercules Powder Co., Wilmington, Del.
Gunter, C. W., Bleacher, Mooresville Cotton Mill, Mooresville, N. C.
Haddock, J. H., Erwin Cotton Mills, Durham, N. C.
Haddock, Paul F., Sales Mgr., A. Klipstein & Co., Charlotte, N. C.
Haney, M. D., Jr., DuPont Co., Charlotte, N. C.
Harbin, D. B., Asst. Prof., N. C. State College, Raleigh, N. C.
Harlan, W. R., Chemist, Stein, Hall & Co., Charlotte, N. C.
Harley, Robert R., Office Mgr., Cocker Machine and Foundry Co., Gastonia, N. C.
Harrell, O. A., Asst. Overseer Finishing, Stonecutter, Mills, Spindale, N. C.
Harris, F. C., Overseer Finishing, Cramerton Mills, Cramerton, N. C.
Harris, H. L., Dyer, Golden Belt Mfg. Co., Durham, N. C.
Harris, Carl R., Supt., Erwin Cotton Mills, Cooleemee, N. C.
Haskins, L. L., Sou. Rep., Akron Belting Co., Greenville, S. C.
Hayes, S. L., Resident Mgr., Hartsville Print & Dye Works, Hartsville, S. C.
Hinton, G. S., Dyer & Finisher, Gregg Dyeing Co., Graniteville, S. C.
Hipp, F. A., Salesman, Textile Mill Supply Co., Charlotte, N. C.
Horne, Hugh J., Salesman, Newport Chemical Works, Greensboro, N. C.
Houston, B. F., Salesman, Wm. C. Robinson & Sons Co., Charlotte, N. C.
Howard, J. M., Salesman, DuPont Co., Charlotte, N. C.
Howard, Geo. R., DuPont Co., Charlotte, N. C.
Howell, B. E., Chemist Technician, Staley Sales Corp., Spartanburg, S. C.
Hunt, W. M., Salesman, Newport Chemical Co., Greensboro, N. C.
Hunter, D. T., Asst. Dyer, Cannon Mills No. 6, Concord, N. C.
Hunter, H. A., Dyer, Cannon Mills, Concord, N. C.
Hunter, H. L., Teacher, Clemson College, S. C.
Hunter, J. D., Chemist and Sales, Chas. H. Stone, Charlotte, N. C.
Ivey, J. W., Rep., Mathieson Alkali Works, Charlotte, N. C.
Ivey, W. R., Salesman, DuPont Co., Charlotte, N. C.
Irwin, Robt. V., Sales Engineer, Permutit Co., Spartanburg, S. C.
Isley, H. B., Dyer, Erwin Mills, Cooleemee, N. C.
Jepson, Alfred, General Mgr., Savona Mfg. Co., Charlotte, N. C.
Johnson, John A., Sou. Rep., W. H. & F. Gordon, Jr. Mfg. Co.
Johnson. T. R., Dyer, Southern Franklin Process Co., Greenville, S. C.
Johnston, C. R., Asst. Sec. and Treas., Mooresville Cotton Mills, Mooresville, N. C.
Kelly, Andrew J., Technical Service, Burkart-Schier Chemical Co., Chattanooga, Tenn.
Kennett, L. R., Salesman, Roessler & Hasslacher Chem. Co., Mooresville, N. C.
Kennedy, W. A., Sou. Rep., Fletcher Works, Philadelphia, Pa.
Kile, L. L., Foreman, American Yarn & Processing Co., Mt. Holly, N. C.
King, H. A., Salesman, National Aniline & Chemical Co., New York City.
King, T. C., Meritas Mills, Columbus, Ga.
Klinck, John, Supt., Sibley Mfg. Co., Augusta, Ga.
Kline, W. N., Student, Clemson College, S. C.
Klumph, E. W., Salesman, Oakite Products, Inc., New York City.
Klutz, Geo. O., Dyer, Salisbury Cotton Mills, Salisbury, N. C.
Lancaster, J. L., Dyer, Hartsell Mills, Concord, N. C.
Lang, H. O., Salesman Mgr., Columbus Truck & Supply Co., Columbus, Ga.
Leary, M. J., Finisher, Hartsville Print & Dye Works. Hartsville, S. C.
Lefort, E. J., Dem., The Ciba Co., Inc., Greensboro, N. C.
Lehrer, Samuel, Salesman, Hart Products Corp., Spartanburg, S. C.
Love, J. E., Colorist, Karastan Rug Mills, Leaksville, N. C.
McCarty, G. S., Sales Mgr., American Aniline & Chem. Co., Philadelphia, Pa.
McDavid, Arthur S., Dyer, Southern Worsted Corp., Greenville, S. C.
MacDougall, Robt. S., Colorist Supt., Rock Hill Printing & Finishing Co., Rock Hill, S. C.
McGee, R. L., Student, Clemson College, S. C.
McGee, Wm. A., Cotton, Atlanta, Ga.
McKay, T. H., Sec. and Treas., Southeastern Bleach & Dye Works, Salisbury, N. C.
McKee, Jack, Salesman, Hart Products Corp.
McLaurine, W. M., Sec. and Treas., American Cotton Mfrs. Assn., Charlotte, N. C.
McNeeley, J. E., Erwin Cotton Mills, Cooleemee, N. C.
McNeeley, T. B., Dyer, Mooresville Cotton Mills, Mooresville, N. C.
Mackenzie, M., Sales Mgr., Sandoz Chemical Works, Charlotte, N. C.
Macormac, Alfred R., Prof. Textile Chemistry, Clemson College, S. C.

(Continued on Page 14)



Memorial to Fuller Callaway

Airplane beacon and clock tower erected by employees of Cason J. Callaway Cotton Mills, LaGrange, Ga., in memory of Fuller E. Callaway. It rises 97 feet and is surrounded by an eight-acre park.

An account of the exercises at which the memorial was dedicated appeared in these columns last week.

50-Hour Week in 3 South Carolina Mills

Spartanburg, S. C.—Inauguration of a 50-hour, five-day operating week for Arcadia Mills, near this city; Mills' Mill No. 1, Greenville, S. C., and Mills' Mill No. 2, Woodruff, S. C., is announced by H. Arthur Ligon of Spartanburg, president and treasurer of these textile plants.

This action is taken as an organized program of curtailment, Mr. Ligon explaining: "We consider it better to curtail in this manner than to cease operations for a week each month. The new plan will probably be in effect for the winter months only, although there is nothing definite to state as to that."

These mills are now running ten hours each day and ten hours at night. Hereafter they will be idle all day Saturday, the week-end beginning at 4 a. m. that morning. Approximately 1,500 employees are affected by this change, but there will be no wage reduction. Heretofore these plants have had a 55-hour week and a 50-hour night week, so only the day operations are changed, Mr. Ligon explained.

Cotton Cloth as Wall Covering

Washington, D. C.—The seventh of a series of reports intending to show the possibility of increase in the use of cotton products, and which deals with the use of cotton in interior decoration was made public by the Department of Commerce. The report was prepared by Linville M. Holton, member of the department's New Uses for Cotton Committee.

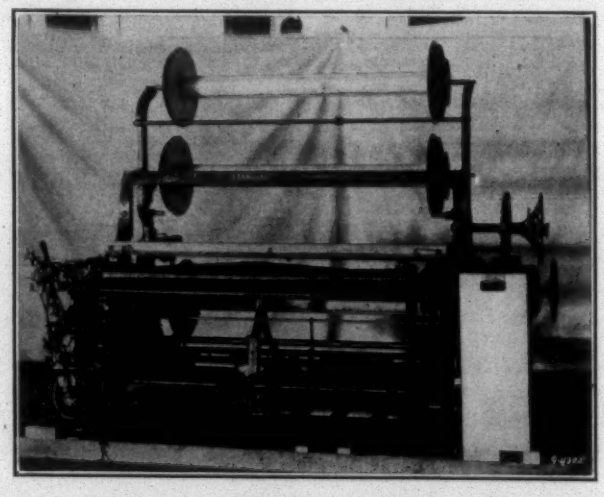
According to the report, since its compilation covering the year 1927, the uses of cotton cloth as a wall covering has received a much larger recognition and it is safe to predict that another such census will report astounding figures to show its advancement in the art of mural decoration. One factory reports an output of 81 miles a day of cloth fabrics for waterproof covering. Another of the leading manufacturers of cloth coverings advertises a distribution of upward of 16,000,000 square yards annually. Many such facts show a decided change to the advantage of the cotton grower.

First Automatic Loom from Standard Plant

Spartanburg, S. C.—The first automatic loom built in a production plant in the South was shipped by the manufacturers, Standard Looms, Inc., to a Southern textile mill last week, marking the beginning of a new era in the history of the industry of the South.

The loom, a 56-inch automatic jacquard, is the first of a series now being built at the Standard Looms plant here.

Since last May the plant has been engaged in the manufacture of repair and replacement parts for various makes of looms. So great has been the demand for parts that actual production of complete looms has been delayed until now.



Standard Automatic Jacquard Loom

Standard Looms, Inc., is a Southern concern and uses Southern materials and labor. All of its products are manufactured in a model plant located just outside of the city limits of Spartanburg, the plant including complete foundry, machine shop and wood working equipment. The iron used comes from Alabama, this material having proved to have a very high breaking point. The wood is South Carolina ash. The labor employed is very largely local.

The plant is now employing 135 men and pouring seven tons of iron daily. Production is being increased as rapidly as men can be trained, and the necessary patterns, jigs and tools prepared.

V. M. Montgomery, prominent Southern textile executive, is the acting president of the company. Jonas Northrop, vice-president and general manager, is a well known figure in the loom manufacturing world, as is Frank Norcross, secretary of the company. Directors are all Southern men connected with the textile industry.

Attendance at Chemists Meeting

(Continued from Page 12)

Madaris, B. A., Production Man, Elliott Knitting Mills, Hickory, N. C.
Marlowe, Tom A., Sou. Sales Agent, L. Sonneborn Sons, Charlotte, N. C.
Mayer, H. G., Charlotte, N. C.
Medlin, Fred C., Dyestuff, DuPont Co., Charlotte, N. C.
Menefee, Chas. E., Iselin-Jefferson Co., Charlotte, N. C.
Miller, H. Grady, Chemist and Dyer, Elliott Knitting Mills, Hickory, N. C.
Miller, J. A., Jr., Pres., Miller Mfg. Co., Taylorsville, N. C.
Mitchell, Burton F., American Yarn & Processing Co., Mt. Holly, N. C.
Mitchell, R. M., Supt. of Dyeing, Proximity Print Works, Greensboro, N. C.
Moffitt, S. A., Supt., Rock Hill Printing & Finishing Co., Rock Hill, S. C.
Monry, N. B., Salesman, Kali Mfg. Co., Philadelphia, Pa.
Montague, J. J., Chemist, Kali Mfg. Co., Philadelphia, Pa.
Moore, A. J., Overseer Dyeing, Cliffside Mills, Cliffside, N. C.
Moore, John R., Industrial Agent, Seaboard Ry., Charlotte, N. C.
Moore, J. E., Salesman, H. B. Mayer, Charlotte, N. C.
Moss, Abe, Asst. Color Mixer, Hartsville Print & Dye Works, Hartsville. S. C.
Moss, D. S., Dist. Mgr., Newport Chemical Works, Greenville, S. C.
Mullin, Chas. E., Clemson College, S. C.
Neiman, Howard S., Editor, Textile Chemist, New York City.
Nelson, Thomas, Dean of Textile, N. C. State College, Raleigh, N. C.
Newman, G. C., Asst. Mgr., DuPont Co., Charlotte, N. C.
Nichols, C. W., Asst. Dyer, Aberfoyle Mfg. Co., Belmont. N. C.
Nuchols, Thos. J., Dyer, Renfrew Mfg. Co., Travelers Rest, S. C.
Okey, Joe, Esther Dye Works, Graham, N. C.
Okey, L. L., Salesman, National Oil Products Co., Harrison, N. J.
Ordway, Chas. B., Textile Chemist and Salesman, Federal Phosphorus Co., Birmingham, Ala.
Ormand, H. H., Foreman, Union Bleachery, Greenville, S. C.
Padgett, J. I., Bleacher, Kerr Bleachery, Concord, N. C.
Parker, S. I., Asst. Supt., Proximity Print Works, Greensboro, N. C.
Patterson, R. F., Asst. Overseer, Cannon Mills Co., Kannapolis, N. C.
Phares, Jack, Salesman, Winaco Chemical Co., Wilmington, N. C.
Pharr, W. N., Supt., Hartsell Mills Co., Concord, N. C.
Pickler, M. R., Chemist, Piedmont Plush Mills, Greenville, S. C.
Pickup, J. G., Bleacher, Dyer and Finisher, Carolina Cotton & Woolen Mills, Fieldale, Va.
Pickup, Thomas W., Color Mixer, Hartsville Print & Dye Works, Hartsville, S. C.
Pickens, W. I., Sales Service, DuPont Co., Charlotte, N. C.
Poindexter, C. C., Chief Chemist, Chatham Mfg. Co., Elkin, N. C.
Porter, Carl H., Mgr., Globe & Catawba Yarn Mills, Mt. Holly, N. C.
Potter, C. D., Sou. Technical Rep., Roessler & Hasslacher Chem. Co., Charlotte, N. C.
Prince, E. D., Overseer Bleaching, Cliffside Mills, Cliffside, N. C.
Puckett, Hugh, Salesman, Chas. H. Stone, Charlotte, N. C.
Quern, D. Stewart, Demonstrator, Buffalo Elec. Chem. Co., Charlotte. N. C.
Quern, J. D., Savona Mfg. Co., Charlotte, N. C.
Ramseur, A. R., Student, Clemson College, S. C.
Reiners, A. H., Supt., Seydel Chemical Co., Jersey City, N. J.
Renick, L. A., Chemist, Carolina Dyeing & Winding Co., Mt. Holly, N. C.
Revell, Howard J., Supt., Piedmont Print Works, Inc., Taylors, S. C.
Reynolds, A. S., Rep., Stevens-John Co., Charlotte, N. C.
Rimmer, Walter, Gen. Sales Mgr., H. & B. American Machine Co., Pawtucket, R. I.
Robertson, John C., Demonstrator, Roessler & Hasslacher Chemical Co., Perth Amboy, N. J.
Robertson, W. F., Jr., Finisher, N. C. Finishing Co., Salisbury, N. C.
Rogers, A. F., Brown Mfg. Co., Concord, N. C.
Roth, T. M., Foreman, Chatham Mfg. Co., Elkin, N. C.
Sandridge, J. D., DuPont Co., Greensboro, N. C.
Schaeffer, J. G., Salesman, Champion Fibre Co., Canton, N. C.
Scholler, F. C., President, Scholler Bros., Inc., Philadelphia, Pa.
Schuttig, Chas. L., Chemist, A. Klipstein & Co., New York City.
Schwarz, E., Editor, "The Melliand," New York City.
Shumate, J. A., Supt., Leaksville Woolen Mills, Charlotte, N. C.
Silver, F. W., Dyer, Parks Hosiery Mills, Asheboro, N. C.
Slaughter, Fred., G. G. Slaughter, Charlotte, N. C.
Slaughter, G. G., Sou. Rep., Atkinson, Haserick & Co., Charlotte, N. C.
Slayton, C. R., Salesman, T. A. Marlowe, Charlotte, N. C.
Smith, Dudley C., Supt., Springstien Mills, Chester, S. C.
Smith, O. C., Finishing Overseer, Stonecutter Mills, Spindale, N. C.
Smith, R. H., Dyer, Durham Hosiery Mills, Durham, N. C.
Smith, Tom, Supt., Thies Dyeing & Finishing Co., Belmont, N. C.
Sorensen, C. C., Carolina Dyeing & Winding Co., Mount Holly, N. C.
Southern, R. H., Chemist and Colorist, Proximity Print Works, Greensboro, N. C.
Spencer, Gordon F., Bleaching Supt., Rock Hill Printing & Finishing Co., Rock Hill, S. C.
Spooner, Ray A., Buyer, Carolina Dyeing & Winding Co., Mt. Holly, N. C.
Sprock, Howard M., Mgr., Geigy Co., Inc., Charlotte, N. C.
Stann, Carl, Overseer Dyeing, Cramerton Mills, Cramerton, N. C.
Statt, P. H., Chief Chemist, Newport Chemical Works, Passaic, N. J.
Stewart, F. E., Dyer, Thies Dyeing & Finishing Co., Belmont, N. C.
Stirewalt, Jacob, Salesman, D. & M. Co., Charlotte, N. C.
Stone, Chas. H., Charlotte, N. C.
Stough, M. A., Salesman, John Campbell & Co., Charlotte, N. C.
Stribling, Ross M., Asst. Chemist, American Enka Corp., Asheville, N. C.
Sullivan, R. L., Knox Chemical Co.

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the *Test!*

"The proof of the pudding is in the eating" . . . . The proof of quality is in the using. Claims are empty assertions in the face of products proving themselves as they work. There is no higher measure of value than the silent testimony of an honestly built product that has *served* and held its own in the serving.

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LAWRENCE, MASS.—LOWELL, MASS.
PHILADELPHIA, PA.

MONTICELLO, GA. — JORDAN DIVISION
GREENVILLE, S.C.
MONTICELLO, GA. DUBLIN, GA.
JOHNSON CITY, TENN.

PERSONAL NEWS

Arthur Jarrett has resigned as superintendent of the Charles Mills Company, Red Springs, N. C.

J. G. Sanders is now overseer of carding at Cotton Mills Products Company, Mobile, Ala.

E. F. Stevens has been promoted to overseer cloth room at the Augusta Factory, Augusta, Ga.

G. D. Byrum has become overseer spinning at the Crawford Cotton Mills, Crawford, Ga.

E. P. Dewberry has been promoted to overseer carding at the Crawford Cotton Mills, Crawford, Ga.

F. W. Leak has resigned as president of Leak, Wall & McRae, Rockingham, N. C.

W. D. Stockton has resigned as designer at the Dover Mills, Shelby, N. C., to become superintendent of the Charles Mills, Red Springs, N. C.

S. I. Batchler, of Social Circle, Ga., has accepted the position of superintendent of the Barrow County Cotton Mills, Lawrence, Ga.

E. Herring, from the Social Circle Mills, Social Circle, Ga., has accepted the position of overseer weaving at the Barrow County Mills, Winder, Ga.

H. C. Wall, former president of the Roberdel Mills, Rockingham, N. C., has been elected president of Leak, Wall & McRae, of the same place.

D. L. Tate has been promoted from overseer weaving to assistant superintendent of the Burlington Mills and Piedmont Weavers, Burlington, N. C.

Walter M. Mitchell has been given charge of the Atlanta offices of the Draper Corporation, succeeding the late Frederick E. Forster.

George P. Entwistle has been elected president of the Roberdel Manufacturing Company, Rockingham, N. C., succeeding H. C. Wall. Mr. Entwistle continues as president of the Pee Dee Manufacturing Company.

W. J. Erwin has resigned as superintendent of the Ella Division, Consolidated Textile Corporation, Shelby, N. C., and accepted the position of assistant to the president of the Republic Mills, Great Falls, S. C.

J. L. Brannon has resigned as superintendent of the Barrow County Cotton Mills, Winder, Ga., and accepted a similar position at the Bowie Cotton Mills, Bowie, Texas.

J. F. Shinn, manager of the Norwood (N. C.) Manufacturing Company, is being sued by W. W. Felder, of Rockingham, N. C., for damage to his car as the result of an automobile accident. Mr. Shinn has filed a counter suit.

Leonard Aitken, general agent of the Lincoln Mills of Alabama, Huntsville, Ala., was signally honored by the Huntsville Acme Club recently when it presented to him the silver cup which is given annually for service, courtesy and action. Mr. Aitken was pronounced the outstanding citizen of the year, being the fourth to win the Acme cup. Besides building the Lincoln Mill into its present proportions, he is the author of a project for the drainage of a large section of the lowlands of Huntsville, a project that is of great public interest at this time, and his services in this connection have been as a volunteer whose time is given without cost to the community. Mr. Aitken is an engineer by profession.

PERSONAL NEWS

Otto Pratt, who has been representing Ed. H. Best & Co. in the Georgia, Alabama and Tennessee territory, will hereafter be in charge of the North Carolina and Virginia territory. W. C. Hames, of Atlanta, who has been under Mr. Pratt, has been given charge of the company's business in Georgia, Alabama and Tennessee. F. B. Crowell will handle the South Carolina territory.

George A. Sloan, secretary of the Cotton-Textile Institute, Inc., announces the appointment of Miss Thelma Roberts to the staff of the New Uses Section of the Institute. Miss Roberts has had extensive experience on fashion research an analytical work and will assist the section particularly in activities which concern the cutting-up trade.

Samuel Sefton Visiting the South

Samuel Sefton, export manager and director of Dronsfield Bros., Ltd., Oldham, England, is visiting the South for several weeks and renewing acquaintances with his many friends.

Mr. Sefton has from time to time during many years past visited Southern mills, and has many friends and customers in this section.

When the editor of this journal was in England two years ago he visited the plant of Dronsfield Bros., Ltd., in Oldham, and while there Mr. Sefton showed him many courtesies.

Obituary

J. P. Stevens

New York.—Funeral services for John Peters Stevens, president of J. P. Stevens & Co., Inc., dry goods commission merchants, 261 Fifth avenue and 57 Worth St., were held at his late home, 985 Hillside avenue, Plainfield, N. J., Tuesday afternoon.

Mr. Stevens died Sunday at his home, where he had been since his arrival from England on the steamer Aquitania, October 18. He had not been well for a long while but had gone abroad in the hope of regaining his health. He was taken seriously ill, however, at Harrowgate, England, in August, and had gradually failed since his return home.

Mr. Stevens left a widow, who was Miss Edna Ten Broeck, and three sons, John P. Stevens, Jr., and Robert T., both of whom live in Plainfield and Nathaniel, who lives in Minneapolis.

Mr. Stevens was a son of Horace N. and Susan Peters Stevens and was born in North Andover, Mass., February 2, 1868. He was a descendant in the seventh generation of John Stevens, who came to this country from England in 1638. He attended Phillips Andover Academy and then entered the dry goods commission business with Faulkner, Page & Co., in Boston. In 1899 he established in New York the house of J. P. Stevens & Co., and engaged in the sale of woolens.

He had been president of the Association of Cotton Textile Merchants and of the American Association of Woolen and Worsted Manufacturers. He was a director of the Central Hanover Bank & Trust Co., the Plainfield Trust Co., M. T. Stevens & Sons Co., Stevens Linen Works, Aragon-Baldwin Cotton Mills, Watts Mills, Dunean Mills and Lawrence Manufacturing Company.

Southern Textile Association Program

The complete program for the semi-annual meeting of the Southern Textile Association, to be held at the Franklin Hotel, Spartanburg, S. C., on Friday, November 1 is given below.

The theme of the meeting will be "The Value of New Machinery." and a most interesting program has been arranged to stress the value of new equipment.

The Program

President's Address—L. L. Brown, superintendent, International Shoe Company, Malvern, Ark.

Invocation—Marshall Dilling, superintendent, A. M. Smyre Manufacturing Company, Gastonia, N. C.

Address of Welcome—W. A. Black, superintendent, Beaumont Manufacturing Company, Spartanburg, S. C.

Response—Carl R. Harris, superintendent, The Erwin Cotton Mill No. 3, Cooleemee, N. C.

Address—"Crime Prevention or the Leisure Hour," Herbert E. Gyles, attorney, Aiken, S. C.

Reports of Sectional Chairmen

Weavers' Division—Chairman, E. A. Franks, superintendent, Dunean Mills, Greenville, S. C.

Alabama-Mississippi-Louisiana Division — Chairman, D. Singleton Cook, agent, Pepperell Manufacturing Company, Opelika, Ala.

Eastern Carolina Division—N. B. Hill, superintendent, Caswell Cotton Mills, Inc., Kinston, N. C.

Master Mechanics' Division—W. G. Young master mechanic, Kendall Mills, Inc., Paw Creek, N. C.

Finishers', Bleachers' and Mercerizers' Division—Paul F. Haddock, A. Klipstein & Co., Inc., Charlotte, N. C.

Texas Textile Association—H. A. Burrow, superintendent, Consolidated Textile Corp., Bonham, Texas.

Unfinished business.

Presentation of Arkwright Medals—Marshall Dilling.

Adjournment 1:00 p. m.

Luncheon 1:00 p. m.—main dining room of the Franklin Hote.

Chairman Entertainment Features — Smith Crow, superintendent, Drayton Mills, Spartanburg, S. C.

Afternoon Session

Address—"The Value of New Machinery," J. E. Sirrine— J. E. Sirrine & Co., Greenville, S. C.

Address—"The Value of Replacing Old Machinery With New," J. D. Jones, general superintendent, Union Buffalo Mills Company, Union, S. C.; J. B. Harris, vice-pres., Greenwood Cotton Mills, Greenwood, S. C.; E. A. Franks, superintendent, Dunean Mills, Greenville, S. C.

Discussion.

Adjournment.

Clemson Plans Textile Museum

Clemson, S. C.—For several years past Dr. Mullin, professor of chemistry, rayon and dyeing at Clemson College Textile school, has been collecting rare and unusual textile materials of all kinds from various parts of the world. During the past two two years he has collected many very interesting samples of weaving, dyeing, printing, finishing, etc., mostly from Europe and Asia.

While particular attention has been given to the chemistry and dyeing branch of the textile industry, other phases of the subject have not been neglected and one of the latest additions includes about eighty pictures woven from the finest silk. Each of these pictures is just as perfect as if it were painted, but it is actually woven in the cloth on some form of jacquard loom, probably by hand. European artists who have examined this collection of silk pictures state that, from an artistic standpoint, the pictures are wonderful and would be excellent work even if they were painted with a brush instead of woven. While most of the pictures are in black and white, a few are woven in colors.

On account of the often insurmountable difficulties encountered in transferring a painted picture into a loom design, the fact that these pictures are woven makes them all the more wonderful and especially interesting to all those connected with the textile industry. In fact it really takes a weaver or designer to appreciate the difficulties of producing work of this kind even on the hand loom.

As this collection will form the nucleus for a textile museum at Clemson College, Dr. Mullin, will be glad to hear of any textile or related samples suitable for the collection.

SOUTHERN
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D. H. HILL, JR. ..... *Associate Editor*
JUNIUS M. SMITH ..... *Business Manager*

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Cole Blease Writes About Unions

Senator Cole Blease of South Carolina has always had a strong following among the cotton mill operatives of that State and no person has greater influence with them.

The organizers of the United Textile Workers entered South Carolina a short time ago anticipating his support but he very quickly advised the mill operatives against Northern organizers.

In a letter written on October 5th to H. A. Shipp, of Columbia, S. C., Senator Blease said in part:

> If our people mix up with such a class of cattle, they are going to ruin themselves; and I want you as a man and as a friend of these people to plead with them to organize and have their own home organizations; their own home organizers and home people for the officers in their organizations.
>
> If you could see some of the things that I see up here! People who call themselves "Labor Organizers" riding around in fine automobiles, boarding at big hotels and putting on airs, while the people who are paying for it, some of them, are actually sending their money here to keep these organizers, when their own wives and children have not enough to keep them from being hungry and cold. If you could see these things, I think you would say, "Cole is right. Let us have our own organizations, our own officers, and keep our honey at home."

Senator Blease has only given facts that have been stated many times in the editorial columns of the Southern Textile Bulletin.

When the Southern operatives feel the need of a union there will be no objection to their organizing a union of their own, with their own officers and above all their own treasurer.

The organizers of the United Textile Workers (American Federation of Labor) are primarily interested in the mill employees of the South from the standpoint of the amount of money they can get out of them and they would not be in the South now if it were not for the fact that textile unions in the North have lost very heavily in membership.

According to their own figures, Northern Textile Unions had 104,600 members in 1921, whereas authorities now claim that they have only 5,000 and that many of those who remain are not paying dues.

As the dues now received are not enough to support the parasites in the luxury and idleness to which they are accustomed they are looking toward the South for their future income but will look in vain.

Senator Blease told the truth when he described the labor organizers whom he had seen in Washington, riding around in big automobiles and living at the best hotels.

Their dream of finding dupes in Southern mills who are willing to pay for their automobiles and their hotel bills will never come true.

The Attack

The cotton manufacturing industry of the South is being subjected to a very severe attack in which many of our enemies are combined, but as long as the industry is doing what it thinks is right, there is no need to be alarmed over the mass attack or pay much attention to it.

The American Federation of Labor publicity bureau is daily telling what they are going to do about organizing Southern cotton mills and yet they have made no progress and have lost most of the members they secured last spring.

The Federal Council of Churches of Christ in America, an organization very largely controlled by parasites and radicals, which formerly claimed no connection with the union labor movement, appeared at the Toronto meeting of the American Federation of Labor and openly pledged that organization its assistance in organizing unions in our mills.

Radical writers like Sinclair Lewis and Mary Haton Vorse have been employed to write about textile strikes in the South and their stories are so written as to convey to the public a wrong impression.

Radicals in universities and colleges everywhere are joining in the attack upon us and the radicals at the University of North Carolina, of course, saw an opportunity to strike a blow at the textile industry of their State which they would like to destroy, so they published an alleged "research" by Miss Herring upon the subject, "Are the Textile Workers Satisfied?" It is our opinion that they thought that by asking the question at this opportune time they could cause the employees to become dissatisfied and thereby cause additional trouble.

No matter how much the men in the textile

industry of the South may realize the injustice, the unfairness and the falseness of these attacks, most of which come from the North, we can not force people to quit lying.

Ever since the Civil War the South has been an open field for the reformers of the North. The better class of people in the North give the South the right to handle its own affairs but the reformer element, which is, of course, a small minority, are imbued with the "spirit of John Brown," and are never as happy as when they can find something, in the South, to criticise.

They sought to have Congress regulate the affairs of the South, until we carried the two Federal Child Labor Laws to the United States Supreme Court and then established the right of sovereign States to handle their own affairs.

There is not a strike in the South today nor is there any general desire upon the part of mill operatives to join unions.

The mill employees realize that a depression exists and that very few mills can today operate at a profit, and they are willing to await more profitable business before asking for advances in wages.

There are at the present time three textile strikes in New England and there has been no day since April 1st when there have not been more striking mill employees in New England than in the South, but imbued with the "spirit of John Brown" the reformers of the North forget their own conditions and write and talk about us.

Public sentiment in the South is pointing towards the 55 hour week and the prohibition of night employment of those under 18 years of age, which we have long advocated, and mill men of the South should always study the needs of their employees.

We advise ignoring the present mass attack upon us and we are confident that in the end it will amount to nothing.

Finishing and Printing

The joint meeting of the Dyers, Bleachers, Finishers and Mercerizers' Division of the Southern Textile Association and the Piedmont Section of the American Association of Textile Colorists and Chemists in Charlotte last Saturday was not only largely attended but was in many respects a very unusual gathering.

Until that meeting few people had realized the growth of the dyeing, bleaching, finishing and printing business in the South.

We have, of course, for many years done much in the way of dyeing and bleaching, but in recent years finishing and printing plants have been established and have been very successful.

When we looked over that group of men and heard them intelligently discussing the printing of cotton, rayon and silk fabrics we were reminded of the fallacy of the old prediction that Southern mills could never make anything but unfinished coarse goods.

The greatest impressions we received from the meeting of dyers, bleachers, finishers and printers in Charlotte last Saturday were the very large percentage of young men and their evident desire to secure knowledge.

It was a clean cut, earnest bunch of young men, and we are convinced that they will be successful in anything they undertake.

The future of finishing and printing in the South is in their hands, and since we have seen them we feel that it is entirely safe.

In a few years the finest finishing and printing in the world will be done in the Southern States of the United States.

The grandsons of those who said we could not spin 30's yarns are telling us that we can not successfully finish and print, but the grandsons of those who spun 30's were present at the meeting last Saturday and their faces were all that we needed in the way of an answer.

The Callaway Memorial

The memorial tower built by the employees of the Callaway group of mills, LaGrange, Ga., in honor of the memory of Fuller E. Callaway, is more than a tribute to a beloved man. It is a symbol of a relationship between employer and employee that should challenge the attention of all employers everywhere.

Mr. Callaway so lived that those who were associated with him voluntarily contributed $10,000 that his memory might be fittingly honored. It is one of the most appropriate expressions of appreciation that has ever come to our attention.

Topping the tower, which stands 97 feet high, is an airplane beacon light. Pilots who fly by night will chart their courses by its flash. During his lifetime, Mr. Callaway charted a course that kept him close to the hearts of his employees. The remark that he once made that he "operated cotton mills in order to build citizens" was literally true.

Those who are busy abusing the mill owners of the South might well pause for a moment to consider what the Callaway memorial means. They might, if they loved the truth, find a great many more instances of the Callaway idea among the mill villages of the South.

MILL NEWS ITEMS

Spring City, Tenn.—The Southern Silk Company has been incorporated here by C. B. Gibson and V. Z. Cline.

Edenton, N. C.—The Edenton Cotton Mills will soon complete the work of changing the mill from steam to electric drive, the power to be supplied by the Virginia Electric & Power Company.

Decatur, Ala.—It is understood that the coarse gauge knitting machines of the Cadet Hosiery Company, of Philadelphia, will be moved to the plant which they acquired here some time ago.

Statesville, N. C.—The branch factory of the Dillon-Vitt Underwear Company which has been moved here from Hickory, N. C., will manufacture men's and boys' athletic underwear. It has discontinued the line of children's goods which were manufactured at this plant when at Hickory.

North Wilkesboro, N. C.—The second addition which Wilkes Hosiery Mills Company of this place has made this year will be constructed by Foster & Allen, contractors of North Wilkesboro, and will be 60x100 feet and two stories.

Charlotte, N. C.—Reports are current here that a new mercerizing plant is to be erected in this section by a group of combed yarn spinners. The reports state that the proposed plant is to have a weekly capacity of 100,000 pounds. No more definite information regarding the plant is available at this time.

Greenville, S. C.—The Southern Handkerchief Manufacturing Company, recently organized here, will begin operation with a daily capacity of 1,000 dozen, converting cloth made in Greenville mills. The incorporators are W. R. Thomason, formerly treasurer of the Lancaster Cotton Mill, and D. A. Boyd, who developed the handkerchief and fabricated business for the Ware Shoals Manufacturing Company.

Charlotte, N. C. — In the event necessary financial backing can be secured, a movement is on foot to organize a company to engage in the manufacture of full-fashioned silk hose for women in Charlotte, N. C. A. F. Dichtenmueller, formerly secretary of Nebel Knitting Company of Charlotte, is the prime leader in the movement. He is an experienced manufacturer of silk and textiles of other types.

Durham, N. C.—Yarbrough Mills was offered for sale at public auction by W. J. Berry, receiver. Y. E. Smith, superintendent of Durham Cotton Manufacturing Company, was the only bidder, offering $20,000 for the plant and real estate and other holdings of the concern.

The receiver stated that he would recommend that the bid be not accepted, the offer being regarded as entirely too small.

The mill was built about four years ago and is well equipped for the manufacture of fancy cloths. It cost well in excess of $100,000. Liabilities are around $80,000, little of which is secured, the debt being incurred through operating expeneses and losses.

MILL NEWS ITEMS

Stony Point, N. C.—Adell Manufacturing Company has recently bought a set of Breton Minerol process furnished by Borne Scrymser Company of New York City for oil spraying their cotton.

This equipment is manufactured by Herbert Hinckley, Inc., of Charlotte, N. C.

Abbeville, S. C.—Calco Manufacturing Company has resumed operations after a shutdown of three weeks. R. E. Cox, manager of the local plant, stated that the prospects were very bright and that he did not anticipate any more shutdowns. The entire output of the plant will be sold through New York agents. The Calco manufacturing plant is making men's and boys' overalls. It now employs 40 people but will likely increase the number within a short time.

Concord, N. C.—Persistent rumors to the effect that the Cannon Mills Company, operating a chain of mills in the two Carolinas, will establish a mercerizing plant are neither affirmed or denied by officials of the company. When asked if the current report was true, officials replied: "We have nothing to say." The largest mills in the Cannon chain are located at Kannapolis, and the report is to the effect that the mercerizing plant is to be built there.

Knoxville, Tenn. — Erection of an addition to the Morristown Knitting Mills at Morristown, Tenn., east of Knoxville, is to be started immediately, R. L. Rayburn, general manager, has announced. The new addition will be 68 feet long and 40 feet wide. As soon as the building is completed 58 new machines will be added at a cost of approximately $12,000. That will increase the capacity of the plant about 50 per cent. At present there are 119 machines in operation.

The Morristown Knitting Mills is one of the few mills in the country devoted to the exclusive manufacture of infants' hose and since its opening at Morristown several years ago has grown rapidly.

Belton, S. C.—Plans are perfected for the erection of a large building and installation of machinery necessary for the making of children's dresses, according to E. B .Rice, who with his brother, Max Rice, owns and operates the Blair Mills. Associated with them in the financing of the project is Conway Williamson, who started a small enterprise of the kind several months ago.

A complete battery of electrically operated sewing and cutting machines has been purchased for the new establishment and will be installed as soon as the building is completed. The building will be of brick, one-story and basement, with approximately 5,000 square feet of floor space and will occupy a site in North Main street about one block distant from the main business section. Orders have been placed for 200 high speed automatic sewing machines.

It is estimated the plant will provide employment for 250 girls. It is expected the weekly payroll will approximate $2,500 or $3,000.

The plant will make dresses for children from two to six years old.

Texas Textile Mill Activity

Austin, Texas.—Less activity was manifest during September than during August in the textile industry of the State, but most mills were operating at about the same rate as they were last year at this time, according to Brevard Nichols, editor of the Texas Business Review, issued monthly by the Bureau of Business Research at the University of Texas.

"Night shifts were worked in a few cases," Mr. Nichols said. "Large gains in unfilled orders and sales in excess of production were impressive developments during the month.

"In September, 21 mills manufactured 7,454 bales of cotton into 6,425,000 yards of cloth, compared to the consumption of 7,030 bales of cotton and an output of 6,037,000 yards of cloth in September, 1928. For the third quarter, these mills used 22,714,000 bales and produced 18,023,000 yards of cloth; last year in the three months, the same mills took 20,056 bales and turned out 16,495,000 yards of cloth. Cotton goods sales amounted to 7,495,000 yards in September and totaled 18,220,000 yards in the quarter. In September a year ago, sales were 3,217,000 yards and 13,730,000 yards in the third quarter. It appears, therefore, that stocks on hand have been materially reduced during the year.

"Unfilled orders at the beginning of October totaled 9,747,000 yards, compared with 7,801,000 last year and 5,343,000 yards on October 1, 1928. At the present rate of output, bookings are equal to about six weeks' run."

Ciba Violet 6RP

In circular No. 317 the Society of Chemical Industry in Basle present Ciba Violet 6RP, a new addition to Ciba series of vat colors which yields reddish violet shades of very good fastness to light, washing and excelent fastness to chlorine.

On cotton, Ciba Violet 6RP comes into question for yarns for hosiery, embroidery, effect threads, colored woven goods, etc. The good fastness to light and excellent level dyeing property make it of interest for certain classes of piece goods.

On artificial silk (acetate silk excepted) valuable shades of good fastness are produced.

The new product is suitable for silk and is of interest for dyed yarns for goods subsequently to be boiled-off.

On wool Ciba Violet 6RP dyes a fine reddish violet of good fastness to milling when developed at 160—180 deg. F.

Ciba Violet 6RP is very suitable for the direct printing of cotton and silk being applied by the potash process. It is also suitable for colored discharge work on direct dyed and developed grounds. Dyed shades of of Ciba Violet 6RP are not dischargeable with hydrosulphite.

Ciba Violet 6RP is suitable for production of lakes for lithographic-printing and other purposes.

New Hercules Powder Co. Publication

A recent publication issued by the Hercules Powder Company is called "The Labors of a Modern Hercules." The brochure consists of a series of articles by chemists, engineers, and officers of the Hercules company descriptive of Hercules processes and products and the ways in which industry is served by them.

The articles tell of the achievements of chemical research, of the chemist's contribution to beauty and utility, and the scope of operations in which explosives, naval stores, nitrocellulose, purified cotton linters, and acids play a part. Descriptions of the manufacture of black blasting powder, smokeless shot-gun and rifle powders, dynamites, gelatin, and blasting and electric blasting caps are included.

The part which the research laboratories take in the development of new products and processes forms an interesting chapter. "The Labors of a Modern Hercules" may be obtained without cost by writing to the Hercules Powder Company, Wilmington, Delaware.

Southern Textile Exposition

Greenville, S. C.—Exhibitors at the ninth Southern Textile Exposition, to be held in Textile Hall, this city, for one week beginning October 20, 1930, are beginning to make arrangements for adequately displaying their products.

Space asignments having recently been made, exhibitors are now making preliminary preparations for the shipment of their exhibits and size of the displays. An extension o fthe same size as was used in 1928 will connect the large permanent steel annex with the main hall, making the exhibition building practically one structure. Letters inviting presidents, superintendents and mill executives in every State of the country will be

sent out, and it is expected the attendance at the exposition will surpass any of the previous shows by a wide margin.

Southern Looms

Buried in the news of the past week was an obscure item whic hmay yet prove to have been of far-reaching significance for the South. On Wednesday the manufacturing plant of Standard Looms, Inc., in Spartanburg, S. C., shipped to a Southern textile mill the first loom ever built south of the Mason & Dixon line. This loom is the first piece of cotton mill machinery manufactured in the South, in which Southern material and Southern labor were used exclusively.

The Spartanburg firm, situated in the very heart of the textile industry, now maintains a modern and complete plant for the manufacture and repair, not only of looms but of other mill machinery as well. A force of 125 men are at work in the plant, and the wheels are turning on full-production schedule.

The establishment of such an industry in this section marks a distinct step forward. In a day when the industry in all its ramifications is facing th efuture with some degree of uncertainty, it is an encouraging if not a revolutionary advance that the South is now in a position to manufacture for itself the important and delicate machinery required for the expansion of mill operations. Savings effected in freight alone should amount to a considerable sum in the aggregate, but more significant still is the knowledge that in its leading industry the South is virtually declaring its independence. —Asheville Citizen.

Japanese Production Greater

Washington, D. C. — Japanese production of cotton yarn and cloth was even greater in September than in August, and with lower imports, stocks of raw cotton declined, but exports of both yarn and cloth were reduced, according to a cable to the Foreign Service of the Bureau of Agricultural Economics from Consul Talbott at Kobe. Cotton yarn production for September rose to the record level of 97,000,000 pounds, compared with 89,000,000 in August and 81,000,000 in September last year. Exports of cotton declined 18 per cent in September and were 32 per cent below those of September last year, while exports of cotton cloth fell 8 per cent.

Imports of American cotton declined about 8,000 bales and those of Indian cotton declined about 50,000 bales, but imports of other cottons, mostly Chinese, increased more than 30,000 bales of about 500 pounds gross weight. Stocks of all raw cotton in bonded in warehouses at Kobe and Osaha were reduced 100,000 bales during September, amounting to about 328,000 bales of 500 pounds gross weight at the end of the month compared with 283,000 bales the year previous. Stocks of American cotton were reduced 41,000 bales during the month and the total of 90,000 remaining was only 6,000 greater than a year ago.

Civil difficulties in northwestern China have caused some uneasiness and price declines in the Chinese cotton spinning industry; and further depreciation of silver making the spinning of low count yarns from Chineses cotton relatively more profitable than the spinning of high count yarns from American cotton, according to Agricultural Commissioner Nyhus at Shanghai.

Attendance at Chemists Meeting

(Continued from Page 14)

Sumner, J. Fred, Foreman, American Yarn & Processing Co., Mt. Holly, N. C.

Suttle, C. B., Jr., A. Klipstein & Co., Charlotte, N. C.

Suttle, W. R., Salesman, United Chemical Products Corp., Jersey City, N. J.

Sweet, Norman, B. S., Psychologist, Charlotte, N. C. lotte, N. C.

Taylor, A. F., Cannon Mfg. Co., Kannapolis, N. C.

Taylor, Walter C., Charlotte, N. C.

Thomas, A. H., Research, Kendall Mills, Charlotte, N. C.

Thompson, A. R., Jr., Sou. Mgr., Rohm & Haas Co., Charlotte, N. C.

Tilson, Fred O., Sou. Mgr., Mathieson Alkali Works, Charlotte, N. C.

Turner, Samuel, Gen'l Mgr., Mansfield Mills, Lumberton, N. C.

Vieira, N. R., Demontrator, Newport Chem. Works, Greenville, S. C.

Voegler, Fred B., Hartsville, S. C.

Volk, John L., Dyer, Aberfoyle Mfg. Co., Belmont, N. C.

Walker, Chas. P., Salesman, A. Klipstein & Co., Charlotte, N. C.

Walker, J. D., Salesman, Stein, Hall & Co., Charlotte, N. C.

Walton, T. L., Asst. Dyer, U. S. Finishing Co., Hartsville, S. C.

Ward, Arthur, Supt., Renfrew Plant, Travelers Rest, S. C.

Ward, G. L., Dyer, Highland Park Mfg. Co., Charlotte, N. C.

Warrington, W. F., Salesman, W. A. Kennedy Co., Charlotte, N. C.

Webb, Holbert, Dyer, Kerr Bleaching & Finishing Co., Concord, N. C.

Wells, W. R., Supt., Elmore Co., Spindale, N. C.

Wheeler, R. S., Supt., Crystal Springs Bleachery, Chickamauga, Ga.

White, Fred H., Selling Agent, Charlotte, N. C.

White, James I., Salesman, National Aniline & Chem. Co., Charlotte, N. C.

Willard, W. H., Mgr., National Aniline & Chem. Co., Charlotte, N. C.

Willett, F. M., Rock Hill Printing & Finishing Co., Rock Hill, S. C.

Williams, J. B., Chas. H. Stone Co., Charlotte, N. C.

Williams, W. A., Salesman, American Aniline & Extract Co., Greenville, S. C.

Wilmot, W. E., Dyer, Ware Shoals Bleachery, Ware Shoals, S. C.

Yandell, C. R., Dyer, Highland Park Mfg. Co., Charlotte, N. C.

Zahn, J. Hillman, Salesman, H. W. Butterworth & Sons, Charlotte, N. C.

Textile Stocks Go Downward Slightly

The average in bid price of twenty-five most active common stocks of Southern cotton mill stocks closed for the week at $88.44 per share, registering a decline of 28c per share as compared with the close for the previous week according to the weekly summary as furnished by R. S. Dickson & Company.

INDEX TO ADVERTISERS

Where a — appears opposite a name it indicates that the advertisement does not appear in this issue.

9,099,082 COTTON BALES GINNED PRIOR TO OCT. 18, A GAIN

Washington, D. C. — Counting round bales as half bales and excluding linters, there was a total of 9,099,082 bales of cotton ginned from the growth of 1929 prior to October 18, compared with 8,151,271 bales for the corresponding period in 1928, and 8,117,625 bales in 1927, according to the regular ginning report issued by the Census Bureau, Department of Commerce.

Figures shown above include 86,970 bales of the crop of 1929 ginned prior to August 1, which is counted in the supply for the season of 1928-1929, compared with 88,761 and 162,283 bales of the crops of 1928 and 1927.

The statistics also include 291,205 round bales for 1929; 304,743 for 1928, and 252,242 for 1927. Included in the above are 7,804 bales of American-Egyptian for 1929; 9,948 for 1928, and 6,823 for 1927.

Textile Chemists Hold Meeting

(Continued from Page 9)

must be converted into a metallic tannate by after-treating with a suitable solution. For instance, a mixture of thickening basic color, tannic acid and organic acid (to prevent the precipitation of the color) is printed, dried and steamed. The color and tannic acid combine and form the soluble lake, which is then rendered quite insoluble by passing through a solution of tartar emetic and calcium carbonate. The latter neutralizes the acidity of the bath, due to the production of acid tartrate of potash, by the abstraction of antimony by the tannic acid. In this way, an insoluble double tannate of antimony and dyestuff is obtained, which is attached permanently to the fibre.

A certain amount of printing is done with sulphur colors. For the most part, these are prepared by heating various organic bodies with sulphur and sodium sulphide. In a sense, they are similar to the vat dyes, although entirely different in composition and constitution. At the same time, they form Leuco compounds like the vat colors and may be printed in practically the same way, so that from the colorist's point of view, they fall in an analogous class. The greatest drawback to the use of sulphur colors is that they blacken the rollers, due to the presence of polysulphides which form copper sulphide by attacking the copper rolls. To some extent, this can be overcome by the addition of sodium bisulphite to the alkaline printing paste, but in this case, the use of hydrosulphite is inadmissible since the final result of the reactions of the various chemicals present would be that the poly-sulphides would remain practically unaffected. Recently, manufacturers are trying to put sulphur colors on the market more or less free from polysulphides and these do not affect the copper rolls. The printing of these sulphur colors is best done in a caustic soda-formopon paste. Their fixation depends largely on the presence of plenty of moisture and overdrying of the goods must be avoided. An addition of glycerine to the printing paste will help to increase the hygroscopicity and drying the goods in hot air, and not over the cans, will also tend to prevent too thorough drying. The subsequent processing is similar to that employed for vat colors already mentioned, and is, in effect, a thorough oxidation of the Leuco compound back to the dyestuff.

In bringing this brief survey to a close, I still want to touch on one or two other chemical features which may interest you. I have spoken of the varying of chemical compounds to produce varying shades and of the use of other chemicals to produce and develop colors, and it is of paramount importance to any printer to understand something of the chemistry of these various methods to obtain the maximum benefits which accrue from such knowledge. This will enable him to combine methods and dyestuffs to obtain certain valuable effects. Let me illustrate briefly a few of these instances, taking a relatively simple one first. Mention has been made of the formation of Leuco compounds of certain classes of dyestuffs (vat, basic and sulphur colors) by sodium hydrosulphite or its derivatives. Not all dyestuffs give Leuco compounds, however, and outstanding among these are most of the direct cotton colors, developed colors and naphthols. The effect of hydrosulphite on these colors is actually to destroy them by decomposing what is known as the chromophore or color forming group, which, in the cases under consideration, is the Azo group (-N:N-). Most dyers are perfectly familiar with the operation known as stripping and this is usually done with hydro-

(Continued on Page 32)

SUPERINTENDENTS AND OVERSEERS

We wish to obtain a complete list of the superintendents and overseers of every cotton mill in the South. Please fill in the enclosed blank and send it to us.

....., 19.....

Name of Mill.....

Town.....

.....Spinning Spindles .....Looms

.....Superintendent

.....Carder

.....Spinner

.....Weaver

.....Cloth Room

.....Dyer

.....Master Mechanic

Recent changes.....

.....

.....

Knitting Trade Notes

The Associated Knit Goods Manufacturers of America will hold a joint meeting with the Federal Trade Commission some tim enext month. The exact date has not been set yet, according to R. A. Cheney, secretary of the association.

The National Retail Dry Goods Association and the National Association of Retail Clothiers and Furnishers have asked that a date convenient to them be set up, as they are also interested.

The Allen-A Company reports that with their retailer patrons the most popular color in silk hosiery is the light gunmetal.

Sable and crystal beige were the next most popular colors, and accounted for the second largest group of sales. Almore and French nude ranked third in sales.

Three numbers of full-fashioned hosiery have been increased in price by the Burlington Hosiery Mill, to become active November 1st.

Thirty-nine gauge numbers will be increased from $8.75 to $9.00. One 42-gauge number will be increased from $9.75 to $10.00 a dozen, and another 42-gauge number will be increased from $10.50 to $11.00 a dozen.

According to reports from the mill management orders have been sold up to January 1st.

Durene Association Licenses Mills

Two hundred and eighty-three manufacturers, mainly producing hosiery and underwear and including some of the most prominent concerns here and abroad, have been licensed by the Durene Association of America to employ the Durene label on their products made from these yarns, it was announced at the offices of the organization's Merchandising Counsel Division. Of this number, 259 are American manufacturers located in 26 textile-apparel producing States, 22 are Canadian firms in the provinces of Ontario and Quebec, while Australia and Cuba are represented among the licensees by one firm each.

The Association, it was said, is particularly pleased with the number of manufacturers licensed to date, the feeling being that it indicates splendid momentum by the organization since its inception not many months ago. Applications continue to come in almost daily, it was pointed out, and these are being acted on as promptly as possible by the licensing committee at the Washington headquarters.

May Develops 300-Needle Rayons

May Hosiery Mills, Burlington, N. C., has developed a 300-needle low-luster all-over rayon number to be priced at about $3.75 a dozen for delivery beginning January.

This is the finest construction yet produced in women's rayons, and is made of 100 denier yarns.

The company has also included a half hose of two-toned wrap patterns in a mixture of silk, rayon and Celanese at $3 a dozen for delivery December 1. It is shown in nine color combinations and 15 styles. Boys' golf hose of cotton with mercerized stripes in four-color combinations will be stressed for spring as a 25-cent seller.

May's 45-gauge four thread full-fashioned number in women's hose will be offered with picot tops for spring

at $11.25 a dozen. It will have the narrow French heel, lisle innerlined welts and soles. It is also planned to put French heels on the rayon numbers to be offered as 50-cent sellers.

Dividends Paid on Cadet Stock

Decatur, Ala.—Dividend checks have been mailed to approximately 150 stockholders at Columbia, Tenn., who purchased 7 per cent preferred stock of the Cadet Hosiery Company, which is also operating plants at Philadelphia and Decatur, Ala. The return on the investment made by the Columbia people was the quarterly dividend from May 13 to October 1. The investment is in 7 per cent preferred stock of the company.

The Columbia plant of the Cadet Company is not yet in operation but splendid progress is being made in the shipment of machines into the South will begin at an early date.

RAYON YARN SALES MOUNT

The threatened shortage of 100 and 150 denier standard yarns became a fact during the past week, according to representatives of two of the leading domestic yarn producers. Both reported that their companies were sold up on these numbers until after January 1 and were having to reject further business on some other counts.

The general tone of the yarn market is much firmer, leading trade factors reported, with the steady increase in consumption keeping ahead of production. Particularly good demand for its products was reported by one of the smaller companies which sells its output almost exclusively to knitters located within a few hundred miles of its plant.

FULL FASHIONED LISTS FOR 1930 DUE SOON

Philadelphia, Pa. — Prices on full-fashioned hosiery for spring will be named soon, possibly next week, it is stated by several of the leading manufacturers here. The few with whom the proposed revision was discussed agree it ought to be slightly upward, but it is the opinion there will be no changes of moment.

The unsettled condition of the markets for raw silk, the manufacturers say, may cause some little delay in making formal announcement of the new prices for the first period of 1930.

EIGHT AND 10-THREAD SILK GOODS STRESSED

Competition on seven-and four-thread full fashioned silk hosiery has forced prices on the two constructions down to such a point that a Pennsylvania mill is now concentrating on the heavier eight- and 10-thread numbers to gain a legitimate profit. The local office of the concern reports excellent business on these numbers, which are offered with lisle tops and lisle soles to the jobbing trade.

Several mills selling to retailers have also observed this method of getting out of the main stream of competition, but in order to keep their lines clear of "price goods" have been making the heavier stockings on 45- and 48-gauge machines, and of silk from top to toe. Formerly a construction of this type would have been found too expensive, but a 45-gauge eight-thread stocking is today rated as one of the better sellers in quality merchandise. It is noted that 48-gauge four-thread rather than three-thread hose are more popular.

Textile Chemists Hold Meeting

(Continued from Page 29)

sulphites. The printer utilizes this same operation to obtain whites against a colored ground, except that he localizes the action of the chemical by the use of gums and thickeners. If he mixes with his discharge paste a color which forms a Leuco compound and which is only temporarily affected by the hydrosulphite, he can do two operations in one. That is to say, locally destroy the ground color and substitute it with another of different shade. This method is very largely used in the manufacture of printed silks. Dischargeable Azo colors are used for the ground and basic colors for the design. Another very interesting combination method is that of printing naphthols and vat colors on the same piece of cloth. The cloth is first padded in a solution of the naphthol. It is then printed with a vat color from an alkaline-hydrosulphite paste, and at the same time, with a neutral diazo salt or nitrosamine. The alkali in the vat printing paste locally dissolves off the naphthol and allows the vat color to be fixed with the hydrosulphite. The nitrosamine combines with the naphthol and the subsequent steaming develops both types of dyestuff.

Finally, there is another very interesting resist style which is comparatively new and that is of naphthol colors under aniline black. The cloth is padded with a fresh aniline solution and dried. It is then printed with a zinc oxide-caustic soda resist containing a naphthol. The zinc oxide caustic soda prevents the local formation of the black in the subsequent steaming. After this operation, the cloth is padded in a solution of a nitrosamine and finished.

There are many, many other novel effects possible to produce but which cannot be considered here. That these effects have been produced by a thorough knowledge, not only of practical but theoretical chemistry, can not be doubted, and to those of you who are interested in this fascinating branch of the textile industry, I can recommend nothing more interesting and beneficial than a study of the principles involved and the progress already made in its development.

Afternoon Session

The two groups met in the afternoon session for a technical discussion covering bleaching, dyeing, finishing, mercerizing and related subjects, the discussion being led by Professor Mullin.

Following the afternoon session, the Piedmont Section, A. A. T. C. C., held a brief business session. New officers for the coming year were elected as follows: Chairman, R. M. Mitchell, of the Proximity Print Works, Greensboro; vice-chairman, S. L. Hayes, resident manager, Hartsville Print and Dye Works, Hartsville, S. C.; secretary, A. R. Thompson, Jr., Southern manager for Rohm & Haas Co., Charlotte; treasurer, D. C. Newman, Dupont Co., Charlotte.

The Banquet

The members were guests Saturday evening at a banquet at Hotel Charlotte tendered by friends of the two Associations.

The banquet program was unusually interesting, and was thoroughly enjoyed by the large crowd present.

Paul F. Haddock was toastmaster and introduced a number of well known textile men who made short addresses. The feature talk of the evening was by Norman Sweet, whose subject was "The Psychology of Personality."

Following the invocation by Marshall Dilling, the address of welcome was made by W. M. McLaurine, secre-

tary of the American Cotton Manufacturers' Association. The response for the Southern Textile Association was made by Carl R. Harris, former president, and for the A. A. T. C. C. by Charles H. Stone.

A number of distinguished guests were introduced by David Clark, editor of the Southern Textile Bulletin. Officers of the two groups were introduced by Mr. Haddock.

Prizes for the holders of lucky numbers drawn at the banquet were presented by A. R. Thompson, Jr., of Charlotte.

A number of musical and entertainment features added greatly to the success of the banquet.

Textile piece goods were contributed as prizes through the courtesy of the following firms: Iselin-Jefferson Company, Savona Manufacturing Company, Duchess, Inc., Celanese Corporation of America, Cannon Mills Company, Nebel Knitting Mills, Erwin Cotton Mills, North Carolina Finishing Company, Highland Park Manufacturing Company, Mooresville Cotton Mills.

The banquet was furnished complimentary to the joint associations, members and guests by the following:

American Enka Corp., Asheville, N. C.; L. M. Bowes, Chemical and Dye Corp.; L. M. Boyd, Scholler Bros.; C. E. Brookes, Dixie Chemical Co.; L. W. Buck, National Adehive Co.; R. E. Buck, Arnold Hoffman Co.; J. Ebert Butterworth, H. W. Butterworth & Sons Co.; David Clark, Clark Publishing Co.; George B. Cocker, Cocker Machine & Foundry Co.; F. H. Coker, DuPont Rayon Co.; John L. Crist, Beaver Chemical Corp.; John L. Dabbs, DuPont Co.; Harry S. Drum, Smith-Drum Co.; W. M. Failor, Victor G. Bloede Co.; A. H. Gaede, Laurel Soap Co.; R. W. Glenn, Ciba Co.; Fred Glover, Textile Mill Supply Co.; Eugene Graham, Charlotte Supply Co.; Ira L. Griffin, Stein Hall Co.; Paul F. Haddock, A. Klipstein & Co.; John A. Johnson, W. H. & F. Jordan, Jr., Mfg. Co.; E. W. Klumph, Oakite Products Co., Inc.; John D. Lewis, John D. Lewis & Co.; Thos. A. Marlowe, L. Sonneborn Co.; H. G. Mayer, Textile Finishing Machinery Co., and D. & M. Co.; R. B. A. C. MacIntyre, Commonwealth Color and Chemical Co.; Malcolm MacKenzie, Sandoz Chemical Works, Inc.; G. S. McCarty, American Aniline & Extract Corp.; Cameron McRae, Arabol Mfg. Co.; Todd B. Meisenheimer, Celanese Corp. of America; J. G. Montague, Kali Co.; Dyer S. Moss, Newport Chemical Works; Clarence H. Ochs, John P. Marston Co.; J. Norman Pease, Lockwood Greene Co.; R. W. Philip, W. R. C. Smith Publishing Co.; F. B. Porter, Southern Agricultural Chemical Co.; Chas. D. Potter, Roessler & Hasslacher Chemical Co.; H. W. Rose, Viscose Co. of America; J. G. Schaeffer, Champion Fibre Co.; Gibbons G. Slaughter, Atkinson-Haserick Co.; Howard M. Sprock, Geigy Co., Inc.; B. Anderson Stigen, General Dyestuffs Corp.; Chas. H. Stone, Chas. H. Stone Co.; M. A. Stough, John Campbell & Co.; John G. Summers, Noil Chemical & Color Works; A. R., Thompson, Jr., Rohm & Haas Co.; Fred O. Tilson, Mathieson Alkali Works; C. E. Waddell, Anderson-Clayton Co.; Robert Weatherly, Federal Phosphorus Co.; Fred H. White, Gaston County Dyeing Machinery Co.; W. H. Willard, National Aniline & Chemical Co.; C. M. Woofolk, Grasselli Chemical Co.

Greenville, S. C.—Development of the loom recently patented by Dr. B. D. Hahn, pastor of Pendleton Street Baptist Church, will be begun in the near future by the American Loom Company, which was granted a charter with a capital stock of $50,000. F. A. Lawton, of Lawton Lumber Company, is president and treasurer of the firm, and S. Friday Swett is secretary. Most of the stockholders are local persons.

COTTON GOODS

New York.—The week was a quiet one in the cotton goods markets. Most buyers continued to delay further large buying pending developments in the cotton situation. The price situation continued steady. Mills still have a good volume of business in their books and buying pressure was not sufficient to test out prices.

Only a moderate amount of business in gray goods was put through, with no quotable changes in prices reported.

Sales of moderate lots of blankets and flannels were reported and stocks are in fairly clean shape in first hands. Colored cottons have been selling more freely than gray goods and work suits and juvenile garment manufacturers are continuing to make substantial deliveries.

Additional business has been done on tickings and since prices were announced as unchanged for spring on ginghams, orders have been coming along more freely for future deliveries. Sheets and pillow cases are comfortably sold ahead in several instances and there is a moderate filling-in demand reported for holiday packaged lines. Automobile fabrics, including tire fabrics, are quiet and deliveries are being held up in several instances at the request of buyers. A fair amount of business has been done in carded yarns for weaving and knitting purposes. Curtains and drapery fabrics have sold quite actively, but at very low prices.

Fine goods markets proved slow. Inquiry was light, and sales were of small amounts for filling-in, to total proving about the lightest in several days, according to informed traders. The demand for goods apparent in several quarters during the previous two days dropped off quickly due to the preoccupation of many buyers in the stock market.

Prices on cotton goods were quoted as follows:

Print cloths, 28-in., 64x60s	5½
Print cloths, 27-in., 64x60s	5¼
Gray goods, 38½-inch., 64x60s	7⅝
Gray goods, 39-in., 80x80s	10⅛
Gray goods, 39-in., 68x72s	8⅝
Brown sheetings, 3-yrd	11½
Brown sheetings, 4-yard, 56x60	9¼
Brown sheetings, stand.	12½
Tickings, 8-oz.	20-21
Denims	17
Standard prints	9½
Staple ginghams, 27-in.	10

YARN MARKET

Philadelphia, Pa.—The yarn market was somewhat more active last week, but business continued on a limited scale. Inquiry was good and there were a few large sales for future delivery, but they were exceptions to the general run of business. Small orders were more frequent, but account for a large total that was handled the previous week.

While a few weak sellers were noted early in the week, the better cotton market later ironed out the low points. Prices quoted by spinners were generally firm and unchanged. A number of very good inquiries for warp yarns were noted and a few good sales resulted. The knitters, as a rule, took only small supplies.

Cotton developments of the week, including the statement from the Federal Farm Board that cotton growers would be aided, has added to the generally bullish attitude of the spinners. They expect higher cotton prices. In the meanwhile, with very small stocks on hand and fairly good orders on their books, the majority of the mills will not be affected by prices pressure for some weeks to come. The normal fall demand is expected to develop within a short time and most mill men consider the outlook as very good. The price of better grade cotton has advanced rather than declined in the past month and prices paid for actual cotton is pointed out by spinners as a necessary factor in keeping prices from a decline.

Combed yarns have failed to show any marked improvement, although a few spinners report better business.

Southern Single Warps

8s	32½
10s	33
12s	33½
14s	34
16s	35
20s	35½
24s	37
30s	40
40s	

Southern Single Skeins

10s	32
12s	33
14s	34
16s	33½
20s	35½
22s	36½
24s	37
26s	38
30s	39½
40s	

Southern Two-ply Skeins

4s-8s	32
10s	32½
12s	33
14s	34
16s	35
20s	36
24s	38
26s	39
30s	40
40s	47½
50s	56
60s	63

Southern Two-ply Warps

8s	32½
10s	33½
12s	34½
14s	34½
16s	35
20s	36
24s	38½
30s	40
40s	48
40s ex.	48

Carpet and Upholstery Yarns in Skeins

8s to 9s 3-4ply tinged tubes	28
8s 3-ply hard white warp twist	31
10s and 12s 3 and 4-ply hard white yarn tubes and skeins	32½
Same warps	33½

Southern Frame Spun Carded Yarn on Cones

8s	31
10s	31
12s	31½
14s	32
16s	32½
18s	33
20s	34½
22s	35
24s	36
26s	37
30s	39½
40s	47

Southern Two-ply Combed Peeler

8s	47
20s	49½
30s	56
38s	58
40s	58½
50s	62½
60s	70
70s	81
80s	91

Southern Two-ply Hard Twist Combed Peeler Weaving Yarns

8s-12s	47
20s	49
30s	57
36s	58
38s	58½
40s	59
50s	63½
60s	72½
70s	83½
80s	96

Southern Combed Peeler Single Yarn on Cones

10s	45½
12s	46
14s	46½
16s	47
20s	47½
22s	48
24s	49
26s	49½
28s	50
38s	56
40s	56
50s	62½
60s	71
70s	71

CLASSIFIED ADS.

For Sale Cheap By Mill

Twenty-four 64" Modified "D" Draper looms, purchased new in 1924 and run for 3½ years. Suitable for enameling ducks, osnaburgs, grograin; also have new equipment for four-harness drill motion. Excellent operating condition. Address "Equipment" care Southern Textile Bulletin.

Wanted To Buy

Haskell & Dawes Tube Twister, 5x7, 12 spindles; also 5x7 bobbins. Little Rock Textile Co., Little Rock, Ark.

Wanted to Buy

Motion picture machine for small industrial community if in good condition and cheap. Give full particular and price. P. O. Box 873, Greenville, S. C.

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83.3% OF COTTON GINNED FOUND TENDERABLE

Washington, D. C.—Of the 5,906,300 bales of cotton, ginned prior to October 1, a total of 4,945,900 bales, or 83.8 per cent was tenderable on contracts subject to section 5 of the cotton futures act, according to the grade and staple report issued by the Bureau of Agricultural Economics, Department of Agriculture. This compares with 4,306,000 bales, or 86.9 per cent prior to October 1, last year. The report is the first for the 1929 season and was issued in accordance with the provisions of the Mayfield-Jones act.

According to the report, the grade of cotton ginned up to October 1 is lower than that ginned in the corresponding period in 1928, and all but 3,300 bales were American upland cotton.

Of the 5,903,000 bales of American upland cotton, 4,886,200 bales were white in color and middling or better in grade. This was 82.8 per cent of the total upland compared with 88.2 per cent last year.

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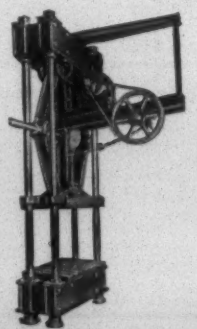

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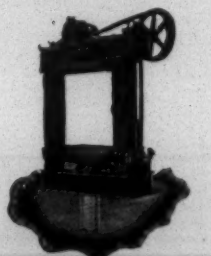

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Sheets From Durene

New York City.—Extensive research into the possibilities of perfecting high grade sheets made wholly of Durene is the latest project approved by the Durene Association of America in its effort to widen the present market for quality yarns, it was stated by L. R. Breslin of the New Uses Division of the organization. While Mr. Breslin declined to elaborate on this announcement, it was learned that this activity will be inaugurated immediately, and that members of the Association as well as various important interested trade factors are confident of the outcome.

That the Durene group is planning to enter the sheeting field is not entirely surprising, inasmuch as it has been inferred from the inception of the organization that the woven fabric field might be entered on a large scale and it is definitly known that the Association is conducting experiments in the shirt fabric field, with concrete developments expected to be made available shortly.

Imports of Cotton Cloth

Imports of cotton cloth through the principal ports of entry registered a slight increase during September, but for the first nine months of the year are well under receipts for this same period of last year. Imports for the nine months ending September were 36,470,000 square yards as compared with 40,273,000 square yards in 1928.

In viewing the imports thus far this year, there has been a decline in arrivals of all classes of sateens, lawns, organdies, nainsooks, cambrics and similar fine goods of average yarn number above 40. There has been a very appreciable decline in arrivals of foreign voiles, plain or fancy crepes, ratines and jacquard woven goods. Gingham imports for this period have amounted to about 475,000 square yards, a slight increase over last year. There is an obvious increase in demand for dotted swisses, for arrivals thus far this year aggrepate about 1,040,000 square yards as against only 322,000 square yards last year. The imports of poplins, broadcloths, madras, oxfords and other shirtings have aggregated during the first nine months 10,890,000 square yards; lawns, organdies and similar fine goods 15,059,000 square yards, and sateens 5,199,000 square yards.

Jacques Wolf Plant Operating at Full Capacity

Reports regarding the explosion occurring on October 9th at the plant of Jacques Wolf & Co., Passaic, N. J., were grossly exaggerated. Only the northwest corner of one of the buildings was damaged. No loss of life nor serious injury was suffered. Full production was resumed the following morning.

This accident was the first of its kind during the thirty years of the company's existence — a record equalled by few industrial concerns in the chemical or any other field.

New Sulfur Color

The dyestuffs department of E. I. DuPont de Nemours & Co., has announced an addition to their line of copper free sulfur colors, under the name of Sulfogene Yellow GGGF.

EMPLOYMENT BUREAU

The fee for joining our employment bureau for three months is $2.00 which will also cover the cost of carrying a small advertisement for two weeks.

If the applicant is a subscriber to the Southern Textile Bulletin and his subscription is paid up to the date of his joining the employment bureau the above fee is only $1.00. During the three month's membership we send the applicant notices of al vacancies in the position which he desires and carry small advertisements for two weeks.

WANT position as overseer weaving. Age 30. Go anywhere. Experienced on drill, twill, sheeting, shade and print cloth. Best references. No. 5661.

WANT position as second hand in winding, warping and quilling, or spinning and warping. Well qualified. No. 5662.

WANT position as overseer carding. Efficient and experienced. Good references No. 5663.

WANT position as overseer cloth room. Good character, experienced and trustworthy. No. 5664.

WANT position as overseer, or as second hand in spinning, where there is a chance of promotion. Experienced and efficient. No. 5665.

WANT position as napper and finisher. Age 31. Two years with large manufacturing company, now in hands of receiver. Experienced in starching and calendering, folding, inspecting and all kinds of finishing, plain, dobby checks and napped goods. No. 5666.

WANT position as overseer weaving. Fancies, jacquard and box work my specialties. Best references. No. 5667.

WANT position as superintendent cloth or yarn mill. Special fancy weaving my hobby. Prefer Alabama. No. 5668.

WANT position as overseer carding. Experienced on carded and combed yarns and an I. C. S. graduate. Reliable and willing. Seven years on present job. No. 5669.

WANT postion as overseer weaving, or as superintendent. No. 5670.

WANT position as master mechanic. Seventeen years experience. On present job eight years, and present employers wil recommend me. No. 5671.

WANT position as bookkeeper or payroll clerk. Finished course in LaSalle accountancy. Age 20, an orphan, Protestant, good morals. Two years card room experience. No. 5672.

WANT position—by high grade superintendent. Can give satisfaction. No. 5673.

WANT position as overseer weaving. Ten years overseer on plain goods. Best references. No. 5674.

WANT position as superintendent or overseer. Jacquard work preferred. Best references. No. 5675.

WANT position as overseer spinning. Special studies in spinning, and 25 years experience. Good references. No. 5676

WANT position as superintendent, or as carder and spinner. Experienced, good manager of help and best references. No. 5677.

WANT position as superintendent or as overser carding and spinning. Age 42. Experienced on plain, fancies, silk, rayon, and cotton fabrics. References. No. 5678.

WANT position as master mechanic. 20 years experience and can handle any size job. Go anywhere. No. 5679.

WANT position as overseer weaving or designing, or both. 15 years experience on cotton, rayon, fancies and mixed. Six years designer. No. 5680.

WANT position as overseer cloth room. 15 years experience in gingham, wide and narrow sheeting, blankets, bedspreads and other goods. Understand shipping. No. 5681.

WANT position as superintendent or assistant superintendent. Good reason for wanting to change. Best references. No. 5682.

WANT position as overseer weaving. Experienced on fancies, rayon, upholstery and dress goods. Would accept position as second hand in large mill if pay is right. No. 5683.

WANT position as overseer or second hand in weaving. Six years experience on plain goods. Several years with Draper Corp. Good references. No. 5684.

WANT position as head loomfixer or overhauler. 18 years experience. One weaver in family. Good references. No. 5685.

WANT position as overseer weaving, or slashing, spooling and warping. Experienced on plain and fancies. Strictly temperate. No. 5686.

WANT position as superintendent or as overseer weaving. One loomfixer in family. Good references. No. 5687.

WANT position as dyer. Experienced on raw stock and long chain. No. 5688.

WANT position as superintendent or as overseer jacquard weaving. Textile school graduate and practical experience. No. 5689.

WANT position as second hand in carding or as card grinder. 14 years card room experience and good references. No. 5690.

WANT position as personal manager. University graduate and six years experience. Best references as to character, training, experience and ability. No. 5691.

WANT position as overseer spinning. 25 years experience on colored work. No. 5692.

WANT position as carder or spinner—carding preferred—or as superintendent of small yarn mill. Best of reference. No. 5693.

WANT position as overseer weaving. Best references. No. 5694.

WANT position as overseer carding. Experienced and reliable. No. 5695.

WANT position as overseer spinning. Experienced on various numbers and can give the best of references. No. 5697.

WANT position as overseer carding or spinning. Experienced and a good manager of help. Would accept position as second hand in large plant. No. 5698. as second hand in large mill if wages

WANT position as overseer spinning, or are good. Now employed but need a better position, and am qualified for it. References. No. 5699.

WANT position as overseer or second hand in large card room. I. C. S. graduate, ten years experience, married and can give the best of references. No. 5700.

RAYON RESEARCHES AT N. C. STATE

Burlington, N. C.—Three fellowships in the research field of chemistry and physics, to be known as the Dr. W. O. Mitscherling Fellowships in chemical engineering, are to be established in the North Carolina College of Agriculture and Engineering, at Raleigh, by Dr. W. O. Mitscherling, vice-president and chemical director of the A. M. Johnson Rayon Mills, Inc., it became known here.

Administration of the fellowships will be under the direction of Dr. E. E. Randolph, of the chemical engineering department of the college. In a public statement on this evident interest in advancing study in chemistry and physics in a Southern insituation, Dr. Mitscherling said:

"Of course it is not necessary to say that I am always interested in the progress of scientific work, and at no time is it a sacrifice to me if I can actually see the advancement of the work. On the contrary, it is a great satisfaction to see young fellows engaged in research, and I really think that is just what an institution like yours needs," he said in writing Dr. Randolph. He said further: "It needs an outsider who pushes and challenges the honor of men for higher motives in chemistry and physics research."

In setting forth the requirements for his fellowships, Dr. Mitscherling specified that all work must be along the lines of cellulose, under the following articles:

One fellowship must be along the line of cross-sections of rayon and similar fibres, finishing up with micro-photographs; and perhaps, if it is successful, I will establish a fellowship for ultra-microphotography.

The second felowship should deal with soda cellulose, various concentrations of caustic soda for dipping purposes, temperature and time dippings and subsequent viscosities of antogenate solutions.

The third fellowship should deal with the influence of small particles of foreign bodies, such as iron and aluminum, present in viscose solutions, and their influence on its viscosity.

These, Dr. Mitscherling points out, are topics of the utmost importance to the rayon industry. Young men selected to have these fellowships are invited to come here for preliminary lectures by Dr. Mitscherling himself.